SELECTION FOR SECONDARY EDUCATION

A Survey

by

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Dedicated with thanks
to
the children and teachers
in Southampton and Burton-on-Trent
who co-operated
in the experiments upon which
much of this book is based

FOREWORD

THE subject of this book is of vital interest nowadays to parents with young children, as well as to members of the educational profession. With the virtual abolition of fee-paying by the Education Act of 1944, entrance to Secondary Grammar Schools has become almost wholly competitive; and it is known that roughly half the parents in the country desire this type of education, although Grammar School places are available only for some 20 per cent of children and for much smaller proportions in some areas. Parents realize that, in addition to the value of a thorough education as such, it provides the usual avenue to white-collar and professional jobs, and the chance of going to a University. Thus primary school teachers are subjected to great pressure, and are inevitably tempted to concentrate unduly on coaching their pupils for the selection examination from an early age. Dr. Dempster brings out clearly the problems inherent in this situation, while not neglecting to draw attention to the merits of other types of education—modern and technical—which have so far generally failed to win 'parity of esteem'.

So crucial has the selection procedure become to so many people that it has evoked an enormous amount of controversy and criticism—often ill-informed. In particular the intelligence and other objective tests, which are unlike the examinations to which parents themselves are accustomed, have aroused suspicion. Dr. Dempster is himself an educational administrator who knows the practical difficulties of achieving a really satisfactory selection scheme; he is also a psychologist who understands the value and the weaknesses of the numerous tests, examinations and other techniques which have been tried for this purpose. His book has many merits, but two seem to me outstanding. First, he shows that selection is not an arbitrary, hit-or-miss or unfair procedure—which so many teachers, as well as parents, seem to believe. Actually more is known about its effectiveness than about that of any other public examination, and every step that an Education Authority takes is guided as far as possible by scientifically collected information, and by the earnest desire to reduce the inevitable errors of selection to a minimum. Dr. Dempster himself has conducted a number of relevant investigations, whose results are described. It may surprise many readers to learn that the one-day selection examination as the sole source of information about pupils has been replaced by more extended procedures in most areas; also that intelligence tests are not the main basis of selection—indeed they generally carry less than one-third weight nowadays. Secondly, he never forgets that the selector is dealing with unique, individual, children, not with mere lists of marks and scores, and he insists on the need to combine all available sources of information on each child's aptitudes and interests, including parental aspirations and the knowledge that the junior school teachers have acquired of his attainments and personality. Noteworthy also is his desire to reduce the distorting effects which the selection tests and examinations have on the junior school curriculum. At the same time he has no panacea to offer. Rather he is concerned to describe, for the ordinary intelligent reader, the merit and disadvantages of each separate part, and of the procedure as a whole. This he succeeds in doing with commendable clarity and impartiality.

P. E. VERNON

CONTENTS

PAGE

Foreword v

CHAPTER

I Selection in its Setting 1

II Selection Procedure: A General Discussion of Principles 10

III Attainments Tests 18

IV Intelligence Tests 35

V The Teacher's Contribution 46

VI Interests and Aptitudes 54

VII The Parents' Part 63

VIII Assembling the Evidence: Some Technical Considerations 66

IX Decision from the Evidence 82

X The Aftermath 91

XI Record Cards and Selection 101

XII Premature Leavers 106

XIII Selection or Allocation? 110

XIV Looking Forward 113

Appendix A An Arithmetic Problem Test 120

Appendix B A Simple Record Card 122

Bibliography 124

Index to References 126

General Index 127

CHAPTER I

SELECTION IN ITS SETTING

THE status of education in the public mind has been enhanced during the last century through the growing belief that it is the key to social and economic advance. Probably too many of the responsibilities that should more correctly be shouldered by the family and the Church are being pressed upon it, but, whatever the rights of the case, education's greater prestige brings with it greater popular interest.

Education is passing through a period of rapid change, and interest is naturally focused upon those parts of the system where there is greatest change. Interest leads to criticism, criticism that is often ill-conceived because it is not well informed. Thus from time to time it is necessary to pause awhile to try to see exactly what is happening. The present survey is focused upon selection for secondary education, a matter that concerns almost all children and their parents as the transition from the primary to the secondary step of education draws near. It also concerns more continually teachers who are educating these children, and the survey has been made with these two groups of readers especially in mind. Those who are engaged in planning and carrying out the selection itself may also find the general picture useful, since it brings together much information that is widely scattered. No attempt is made to pass judgement upon alternative methods or to suggest an infallible way of solving all the problems. The time is not ripe for final decisions; we are still learning, and, in any case, it would seem more likely that many good procedures will develop than that one superlative procedure will supersede all others.

Selection is a means to an end: the end is secondary education. Selection aims at offering satisfactory guidance for children passing from Primary Schools to enable them to proceed to appropriate secondary courses. Therefore any discussion of selection must begin with the secondary education which it serves; but the ultimate pattern of secondary education is not yet clear. Possibly the best way to appreciate its present position is to trace the changes that have taken place during the last few decades and to see how selection has served it during this time.

By the nineteen-twenties the Grammar School system had passed through its period of youthful growing pains and attained considerable status with the public. It seems likely that when future generations look back upon educational development in the first half of this century they will select the rise of the Grammar School as the most memorable achievement. To the scattered and often ancient Grammar Schools of the nineteenth century, the Education Act of 1902 made possible the addition of State-aided Secondary Schools. As the provision of places grew, so did the demand for them, while at the same time there was a steady rise in educational standards in the schools and an encouraging growth of sixth-form work. By 1944 the country was well served by a very large number of Secondary Schools of one sort or another, which had the common aim of preparing their pupils for public examinations and passing them on to the Universities and the professions. Some of these were independent of Government support and control, although many of them voluntarily submitted to inspection by His Majesty's Inspectors and were recognized as efficient by the then Board of Education. The larger number received help in one form or another from the State and had therefore to conform to the regulations formulated in the Secondary School Code. At first all children attending such schools paid fees, but soon free places became available in the State-aided schools.

These free-place holders came from the Elementary Schools which formed a second distinct system of State-controlled education. In 1902, these schools were taken over from the School Boards by the new Education Committees of the Counties and Borough Councils. Freed from earlier hampering restrictions on curriculum they began to broaden the basis of the education they gave. As time went on fees were abolished and the age at which children could leave was raised by steps to 14. Between the wars they began to sub-divide on an age basis. Infants' Schools were formed to cater for children from 5 to 7 or 8 and quickly developed their own techniques, making a contribution to the theory and practice of the education of young children which is widely recognized in other countries. Following the report of the Hadow Committee (1926) a further division began to be made at the age of 11 plus, Junior and Senior Schools being formed. These changes took place but slowly, and one-sixth of our children to-day are still educated in all-age schools.

All these schools were administered under a Code for Elementary Schools quite distinct from the Secondary Code mentioned above. Thus up to 1944 Elementary and Secondary Schools formed two separate systems working under different regulations. There was, however, some overlap of function. Under the Elementary Code in a few progressive areas, Selective Central or Intermediate Schools had been set up, keeping their children to 16 or 17 to take public examinations. On the other hand, most Secondary Schools receiving State aid had their preparatory departments for children from the time they entered a school. To some extent, therefore, each system was self-contained and a child could pass his whole school life in one or other of them; in fact many children did so.

The dual system arose partly through historical accident, but it was in keeping with the philosophy of the nineteenth century that envisaged a free and universal elementary education for all, but a secondary education designed for a minority from whom would come the future leaders, thinkers, professional people and highly skilled technicians of the future. The rigid separation of a fee-paying secondary system from a free, or very cheap, elementary system, was out of keeping with the liberal philosophy of this century, and within a year or two of the 1902 Act coming into force an effective bridge had been built by which the more able children from the Elementary Schools could cross at 11 plus to become free-place holders in the Secondary Schools. In the early days this bridge was provided partly as a device to meet the demand for teachers in the

Elementary Schools. Thus in 1906, of the 23,500 scholarships awarded in the Secondary Schools, no less than 11,500 of them were for children who intended to teach. The bridge, however, was there, and the following year McKenna's Education Act widened it considerably when it laid down that 25 per cent of all the places in fee-paying Secondary Schools in receipt of a grant were to be free for selected children from Elementary Schools. The stream of children crossing the bridge grew steadily until by 1927 there were 143,000 free places; but the bulk of the children in the Secondary Schools were still paying fees. By 1944, in some areas all places in Secondary Schools were free,[1] but in most parts of the country fee payers and free-place holders were roughly equal in number. The most important point to remember is that until 1944 two distinct systems of grant-aided education, Elementary and Secondary, still persisted side by side.

This arrangement had, however, steadily become more and more distasteful to democratic thought, and the unification of the two systems brought about by the 1944 Act brought the organization of education more into line with public opinion. The Butler Act of 1944 envisaged state education in one system divided into three stages. The Primary stage was for children up to 11 or 12 years of age. Then came the Secondary stage until a child left full-time schooling. Finally, all education after this, whether full or part-time, came under the heading of Further Education. The old word 'Elementary' had disappeared and the old word 'Secondary' had to be re-defined. If some other word had been found for the second stage it would have helped us to appreciate the new picture much more easily. Secondary was now a stage, not a system, and a stage through which all children would pass. But 'Secondary education for all' after 1944 did not mean what it would have meant before 1944. What had been called 'Secondary' Schools before 1944 were now called 'Grammar' Schools, and nobody in their senses would expect all children, from potential

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[1] By this time 'free' was a misnomer because parents were called upon to contribute to the fees according to their income.

University scholar to the child who could barely read and cipher, to take the exacting course leading to public examinations which Grammar Schools offered.

'Secondary education for all' meant that each child would pass at the age of 11 plus to a school specially planned to cope with this stage of education, but the courses themselves would vary one from another, each offering that form of secondary education which appeared to be best suited to the children that came to them. All such education was now free. Selection was not now to serve as a wicket gate on a bridge from one system to another that would allow able but poor children to pass to a specified form of education they could not otherwise afford, but to guide all children into those forms of secondary education for which they seemed most suited. Before this could be attempted the pattern of courses at the secondary stage had to be determined.

The Butler Act laid down no pattern of schools within the secondary stage of education, but the Hadow Report (1926) had already suggested that there might well be types of schools after 11 plus. In the Spens Report (1938) it was suggested that these might be three in number. To the Grammar Schools, it was suggested, there might be added Technical High Schools for children whose abilities appeared to be in the practical field, the remainder of the children passing to Senior Elementary Schools, to be called Modern Schools. In their new guise suggested by the Norwood Report (1941) of Grammar, Secondary Technical and Secondary Modern, this tripartite division of schools was carried over in educational thought to the new situation. As an alternative to this, multilateral, sometimes erroneously called comprehensive, schools were suggested. These were to be common schools to which all children would pass and, within which, differing courses would provide for each child according to his needs. The acceptance of the tripartite division implied selection for specialist schools at the end of the Primary School course. In multilateral schools it was suggested that all children should follow a similar course for perhaps two years, after which selection for the courses within the school would be made.

In practice there was very little immediate change. The Grammar Schools carried on as before and the Senior Elementary Schools were re-named Secondary Modern Schools. But a battle of theory developed between the protagonists of the tripartite and the multilateral ideas. So far there is little achievement to report on the multilateral front. Some Education Authorities are developing along these lines, but often Grammar Schools are left to themselves, and so far the multilateral schools which have been opened are still in the experimental stage. In most areas the tripartite idea, or some modification of it, has been accepted at least for the time being. In theory again, it has been suggested that about 15% of the children in each age group should enter Grammar Schools, 15% Technical Secondary Schools, and the remainder pass to Secondary Modern Schools. These proportions are based upon little more than a hunch. Even if they turned out to be reasonable in a general sense they would clearly need considerable modification according to local circumstances. Grammar and Secondary Technical Schools would draw from the same ability group, since able boys could show either academic or practical aptitude. Secondary Modern Schools, so says theory, should plan their work to cope with the bulk of the children.

In practice what has happened is this. Grammar Schools ready to receive proportions of the school population that vary greatly from one area to another were already in existence. Except that all their pupils are now admitted through selection procedures, these schools have carried on in their own well-tried tradition.[1] The development of Secondary Technical Schools has been slow. The majority are Junior Technical Schools with a new name that still admit their pupils at 13 plus, although more and more, as opportunities occur, take their children in at 11 plus. There is more provision here for boys than for girls. The Secondary Modern Schools, the greatest educational experiment of our time, are gradually finding their true purpose and place in our educational system. Articles in *The Times Educational Supplement*, September 16th, 19th, 26th and October 3rd, 1952, gave an interesting account of what is happening here. The picture however is far from complete. Selection is still largely focused upon the Grammar Schools with attention to Secondary Technical Schools where these exist. It follows therefore that in discussing current practice in this survey we shall be thinking mainly of the Grammar Schools. Basically all guidance is concerned with ability, aptitude and personality, so this is not such a drawback as it may seem. If we understand the first principles of selection these can be applied to new purposes as the need arises.

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[1] In a typically English manner we have still kept some schools, direct-grant schools, in which there are both fee-payers and free-place holders to confuse the picture. These form a minority, although an important minority, of old-type secondary schools.

Another catchphrase at the time of the Butler Act 'Equality of opportunity' brings us back to the fundamental problem of the pattern of secondary education. Like 'Secondary education for all' it needs interpretation, for it does not follow from it that all children should have the same opportunities. They needed opportunities suited to their capabilities. These opportunities Local Education Authorities were bound by the 1944 Act to provide, for until such an authority has provided educational facilities suited to the 'age, ability and aptitude' of its citizens, young and old, in its area, it has not fulfilled its prime function. In fact all its activities are devoted in one way or another entirely to the provision and operation of this clause of the Act. Once again the Act does not lay down how this shall be achieved, and in every area the approach is different. It is true that the Act called for detailed Development Plans for each Authority, but these can at best be regarded merely as tentative blue-prints. The ideal pattern for each area can only be arrived at through the careful and painstaking study of the best way of realizing the full potentialities of the children, and, as knowledge increases, so the pattern must be modified. Authorities had to begin with the structure of education already existing in their areas, and this varied considerably. Often the provision of Grammar School places is inadequate, or there are, because of the later growth of Grammar School education for girls, more places for boys than for girls. This is one of the reasons why there are such wide differences of Grammar School provision in adjacent areas. Time and planning will overcome this, but the aim can never be to reach an over-all percentage of Grammar School provision for the whole country. This would assume an even distribution of Grammar School needs as shown by an even distribution of ability and aptitude which is not the case. A county borough near London with an essentially middle class population may have a far higher proportion of potential Grammar School children than an adjoining county housing a more representative cross-section of the community. No simple formula can satisfy the needs of such differing groups of children. Thus even the planning to fill the more obvious gaps in the existing structure must be based upon children's needs. Still more must development to meet the less obvious needs of the less able children be dependent upon careful study. Such study is being actively pursued and tentative solutions based upon its results are frequently reported.

Let us turn now to changes in selection methods. The selection of the more able children for free places in Secondary Schools was carried out at first by examination papers of the type already in use for internal tests, but these proved less suited to their new purpose than was expected. Very soon the subject content upon which the tests were based was under fire and, before long, awkward questions were being asked about the marks that different examiners deemed fit to award for the same students' work. Eventually, tests in the basic subjects that could be marked more objectively were designed and adopted. An even more important advance was the introduction, during the nineteen-twenties, of the group intelligence test. So welcome was this that in some places, in the first flush of enthusiasm, it was given far too great an importance in reaching decisions. As time went on, a growing desire for a fuller study of the whole child led to an extension of interviews, the consulting of school-reports and explorations into the possibility of using the teacher's knowledge of the child more fully.

In this survey each of the sources from which information for selection can be obtained will be discussed in turn. In each case the possibilities and pitfalls will be discussed and its contribution to the full appraisal of the child assessed. Then the manner in which this information can be combined to show the child as a whole will be considered. Finally, we shall try to look at the future to see where all this is leading.

Once again it must be stressed that this book does not set out a cut and dried guaranteed 'best' selection procedure. It surveys the whole field, attempting to bring the 'wood' into perspective but at the same time to study the 'trees'. Gradually we are getting to know more about the tools of selection and the best ways of using them. All over the country new procedures are being tried out and new attempts are being made to solve old and new problems. The aim has therefore been to treat the subject as generally as possible to give the picture as a whole to those interested in the problem of selection, but, at the same time, to give sufficient detail without assuming too much specialized knowledge to make the survey of value to those more closely connected with this phase of educational guidance.

It is hoped that this survey may bring a better general understanding of what selectors are trying to do; the problems they are facing and the ways in which they are attempting to reach solutions. Throughout, the child has been kept in the forefront, for it is the child that matters, not any system or theory, and it is upon the happiness and progress of every child that all selection must ultimately be judged.

CHAPTER II

SELECTION PROCEDURE—A GENERAL DISCUSSION OF PRINCIPLES

BEFORE considering the techniques used in selection some general principles must be discussed. Unless this is done the techniques themselves can easily loom out of proportion and come to be regarded as 'ends', instead of being recognized as the 'means' that they must always remain.

First the child must be treated as a unique individual. Any selection procedure starts from the whole child and must go back to the whole child. It may be necessary in the process to look at the child from different view-points, but, when this has been done, the information gained must be used to build up as comprehensive a picture as possible. Thus a procedure that stresses unduly only one or two aspects of the child, or fails to bring together in a usable form all the information gained about the child, cannot be considered to be satisfactory. That each child is unique presents an insoluble difficulty if the idea is carried too far, but, although no two persons, even identical twins, are exactly alike in their physical attributes, yet people can be collected into groups based on similarities such as height, weight, eye and hair colour and so on. In the same way children can be grouped according to their mental qualities. It is important to remember, however, that even though we must, from practical considerations, limit the number of view-points from which we study a child and group our children under general headings, we are still dealing with unique individuals. To lose grip of either of these antithetical elements in our thinking must result in a swing towards either an anarchic or totalitarian position. At all times balance must be preserved between uniqueness and conformity. The emphasis on one or other will vary from time to time. Thus the pressure of dealing with large numbers forces us to do much selection by more or less mechanical means, and for the extreme cases about whom there is very little doubt, either because they are 'in' or they are 'out', this is not a great drawback; but clearly in doubtful cases ways and means must be found of getting back to the individual. Even among the children who are 'in' or 'out' by a general survey there may be certain traits that conflict with the general picture, and thus opportunity must be given for exceptional circumstances, or special aspects of any child, to show themselves. No selection procedure that does not provide for these two safeguards can be considered truly just. That is why an enormous amount of thought is being given to-day to avoid such crudities as the decisions based on one day of tests, or the red line drawn relentlessly across an order of merit list of the results.

What do we want to know about the child? We want to know what he is like now, but we also need to try to forecast how well he will stand up to the course for which he is selected. We need both to diagnose and to prognosticate. Fortunately the two processes are more closely linked than some people would like us to believe, and in assessing the former we are also gaining useful pointers to the latter. As will be seen, however, some data appear to be more useful than others for prognosis.

The first and obvious thing to do is to find out the attainments of the child. When the difficulties of the old style examination became apparent there was a tendency to belittle the value of attainments as evidence for selection. The development of objective tests of attainments has helped to bring them into their own again but, because of the nature of the tests, has also tended to bring upon the tests a charge of lowering standards. Let us take the general idea behind the testing of attainments first.

A child's attainments are something much more than the effect of the impact of teaching on the child, since they are also a measure of his reaction to teaching. His attainments are the result of the functioning of his whole personality. An arithmetic test result is not obtained merely by the exercise of the child's arithmetical ability in isolation. To this must be added the skill of his teacher on the one hand, and the child's temperamental qualities on the other. An intelligent approach, willingness to apply himself, readiness to use as well as acquire knowledge, all these go to build up the result. Thus an attainment test result in any subject is the sum of the reaction of the whole child. His past school history can come into it also. The period of sickness during which he lost touch with essential elements of the subject, the slight deafness, or even the year with an unsympathetic teacher can all show themselves in the result. These last factors stress the need for knowledge of more than attainment test results if just decisions are to be reached. But the essential thing to remember is that attainment tests record more than ability in certain subjects.

Looking at it from another point of view the results of attainment in the basic school subjects, since they also tend to measure basic and vital temperamental qualities, are a useful forecast of success in related school subjects at later stages. Surely the academic school subjects are all closely related to English and arithmetic. It is true that there are some deviations; the child who succeeds in arithmetic may fail in deductive geometry, and the child who can use his own language may fail at Latin; but these are exceptions. By and large success in these basic subjects is a useful guide to future success in a wider curriculum.

The charge that the objective test of attainment, as we now know it, has lost something of the value of the old examination because it is too scrappy, too superficial and has too low a standard, is one that has to be faced. It will be better to discuss this later, but to emphasize here that a searching attainment test, suited to the age and ability of the children it is designed to study, calls into play the whole child. Its result therefore is of very real value and must be looked upon as one of the most important facts about the child as he is, and a pointer to his future achievements.

In passing we have mentioned arithmetical ability. Each child must clearly have a number of such special abilities and may possess them in varying degrees. For many years, however, it has been accepted that, as a background as it were to these special abilities, each child can be considered to show a certain level of 'general' ability in all his mental reactions. No satisfactory definition of 'general mental ability' or 'general intelligence' has yet been found, but the assumption that there is such a phenomenon has given useful results. The fact that this general mental ability appears to be measurable by simple tests has also been found helpful under widely varying circumstances. Such tests, suitably devised, can be used for children and for adults; for selecting candidates to train for complicated tasks and to ascertain children who are not capable of benefiting from schooling. Moreover, speaking generally, the results of such tests have been found to forecast future success at least as well as, and probably slightly better than, other types of tests, such as attainment tests. It is for these reasons that intelligence tests have come into such general use in selection.

When intelligence tests were first used there was a tendency to lean too heavily upon their results; but soon it became clear that, like any other single piece of evidence, it was unwise to place too much reliance upon this, and this alone. The danger of taking too narrow a view of the child has already been stressed. It therefore appears to be reasonable to insist that the results of intelligence tests must never be used in isolation. On the other hand, the importance of such tests as a part of the evidence about the whole child is now generally recognized.

To a large extent intelligence test results counteract the objections that have been raised above against attainment tests; that these can reflect good or bad teaching and can be affected by previous educational history. Whether or not they measure innate ability need not concern us here, but at any rate they do seem to give a picture less affected by past experience than the attainment tests are bound, by their very nature, to do. This new angle on the child is most valuable. As a corollary to this they are less affected by temperamental qualities than attainment tests. Thus a 'lazy' child may do well at an intelligence test and poorly at an attainment test, and this has led to objections that the use of these tests is too liable to favour the 'slick Alec' or the 'spiv' and lays insufficient stress upon the qualities of persistence and application, so important for future scholastic success. This cannot be treated, however, as an argument against their use but merely an argument for care in the consideration of their results. In fact, each piece of our evidence has certain limitations which cannot be ignored.

In speaking of intelligence tests our approach has been through their proven usefulness, and has not been based upon any theory concerning them. This is exactly how their use has been developed; having been found helpful in one context they have used in others. This process has gone on and on until their value in many fields has become generally recognized. As their use has spread and as our experience of them has grown, certain difficulties and problems connected with them have come to light.

In addition to the attainments of the child and his general level of intelligence we need to study his more intimate personality traits. On the one hand we need to know something about his attitude to school work and life; on the other, something of his special interests and bents both in school and outside. It seems doubtful whether either of these complicated matters can adequately be explored by objective tests; in fact it would seem almost improper that they should. In an indirect way a lad's temperament shows itself in attainment test results as has been seen above; but direct testing, even for such valuable and revealing traits as persistence, seems to be impossible. This is not surprising since so many traits appear to be, to a large extent, specific. This persistence can be intense or lacking in the same child when his attention is directed to different activities. A persistence test can therefore only measure persistence in that test and its application to other situations cannot be inferred from the result. It follows that the only way in which persistence in school work can be assessed is from a direct study of the phenomenon itself. It would appear probable that a child who has known steady persistence in the Junior School is likely to make similar effort in the Secondary School. Even this is not certain, however, since the climate of the new school may affect the child adversely and this may affect his persistence.

Since persistence and other personality traits are important factors in success in school work, they need to be taken into account in selection. Since they cannot be measured by tests they need to be assessed by the teachers who know the children and the school situation. Thus we pass from the objective to the subjective and from tests to records. Records are, however, kept by teachers, and not only can persistence in a child vary according to his relationship with individual teachers, but it has been found that teachers find it extremely difficult to rate their pupils for personality traits. All this makes the direct study of such traits very difficult and the selection may be forced back upon the indirect evidence from attainment tests and the like.

Now that selection is, or should be, for many forms of secondary education and not simply for the Grammar School, it is natural that more consideration should be given to a child's interest and aptitudes than has been given in the past. Some children have very definite interests and have their careers planned out in their own minds from a very early age; but there are many who are far less certain. Interests, too, may be ephemeral, and one of the arguments against selection at 11 plus is that the child's interests and aims for his future are not yet formed. It is said, with some degree of truth, that many more children have made up their minds by 13 plus, although a further complication arises from the fact that children seem to be making up their minds later than they used to. Since we seem to be committed to selection at 11 plus the fact that many children have not settled their own minds about this important matter is really an argument for greater flexibility in Secondary School organization and within the schools themselves. In spite of the difficulties of ascertaining the interests of children an attempt must be made to do this.

Aptitude is a still more elusive matter. Like interest, aptitude has also been supposed by some to be less obvious at 11 plus than at 13 plus, but aptitude is more fundamental than interest, and it is doubtful whether this argument holds good. Can aptitude be measured? If so, what are its measurements worth? These are two questions that must be answered later.

We have mentioned in passing the climate of the school which can have an important effect on the child's attitude to his work; but there is also the climate of the home. We all unfortunately know of far too many cases in which home conditions, especially where the home is broken, adversely affect the child's progress. It is important, therefore, that consideration should be given to this important factor. The difficulty here is to avoid both the danger of prying into private affairs and the risk of allowing any sort of prejudice to affect the decision. It should be remembered that prejudice can work both ways, and can give a more favourable picture as easily as it can give a less favourable one. The fact that this is the most difficult of all the evidence to collect and assess does not mean that it should be ignored.

Finally there are a number of what can be termed 'personal considerations' that should be taken into account before any decision is reached. Health, both present and past, is of importance in many cases. School history, for example, the child who has been partly educated abroad, or has wandered round from school to school; psychological history, for example, the thwarted first-born, or the apparently less able of a pair of twins, the step-child, and the child from the broken home—all these merit consideration. This may all be important evidence in individual cases, and makes necessary some sort of individual report both from school and home.

So much for the sources of evidence, the view-point from which the child can be studied, but all this evidence is wasted if it cannot be used, and to be used fully it must be built up to form a picture of the child as an individual. It is granted that these individuals must perforce be ordered and grouped to make the task at all manageable, but, as has been stressed above, the individuality of a child must be able to show itself through this organization, especially round the border line of any selection.

One further basic principle of selection which is gradually forcing its way more and more into the picture, and of which full account must be taken, is the effect of a selection procedure on the work of the Junior School. Selection is a means and not an end, and it should not dominate the Junior School to the detriment of the work done there. This does not mean that it should not affect or influence the Junior School. Provided that its influence is in accord with the legitimate aims of the Junior School course it can be a help and not a hindrance. In considering the development of selection procedure, therefore, due regard must at all times be taken for the effect on the Junior School course. Such things as attainment tests must be critically examined to discover whether they conflict with the effort of the teachers in the Junior School to reach their objectives. The question of stress is a matter, however, that must be left to the good sense of those who teach juniors. It would be unwise and indeed impossible to try to make any selection procedure cover the whole field of Junior School work. Selection must necessarily confine its scope to essentials, but the fact that certain fields of Junior School work are not tested in selection should not mean that they receive less emphasis in the school than the teachers feel is their due. Conversely, the load placed on juniors by the testing of those parts of their work which are dealt with should not demand such high standards that undue time and precedence needs to be given to such parts. In this, those who deal with selection and those who teach juniors have both their parts to play to keep things in proportion.

From this very general discussion of some of the principles underlying the development of a selection procedure, we can now turn to more detailed discussion of its parts.

CHAPTER III

ATTAINMENT TESTS

WHEN we speak of attainment tests to-day we think immediately of objective tests in which the questions are set and the answers given in such a way that they can be marked automatically and conclusively right or wrong. Tests in which the questions are loosely framed and the form of the answer admits variation in marking by different markers have obvious disadvantages. Objective tests such as those produced by Moray House are most carefully prepared and extensively tried out before publication. Items are only admitted to the tests after they have been proved and been worked by many children to rid them of any ambiguities; the value of each item as a means of measuring the child's attainment is ascertained and finally the items are systematically arranged to give each a suitable position in the test and to make the test itself a balanced whole. The care and thoroughness with which this is done makes each test an efficient measuring instrument of attainment. For years now objective tests produced in this way have been used, and it may be helpful to try to see how far they meet the needs of selection and what developments are likely in the future.

Attainment Tests in Arithmetic

There are three main types of arithmetic attainment tests; mechanical, simple problems (often worked mentally) and more complex problems that need setting out. These three forms may sometimes be combined to form tests of different patterns.

As with all attainment tests they must be based, if they are to serve the purpose of the Junior School well, upon a syllabus appropriate to the school. One of the basic principles of teaching arithmetic to-day is that, by and large, the scope of the curriculum should be limited by the normal experience of the child at any given age. 'Barking at print' has largely been replaced by reading for and with comprehension. Using this principle we have now also gone far towards eliminating 'barking at figures'. Brilliant children can be allowed and encouraged to carry abstract manipulative skill beyond the limits of its immediate usefulness, but this should not set the standard for the selection examination. The main aim for all children in the Junior School should be to master a sound core of skill in the basic rules, to acquire sufficient facility with the combinations of numbers to ensure a high standard of accuracy in their calculation, and to apply all this in appreciating and solving everyday arithmetical problems. Thoroughness and lively application of the fundamentals would seem to be of far greater importance than ability to handle complicated processes. It follows that attainment tests should cover both success with the simpler skills and the ability to apply these to everyday affairs. The Mathematical Section of the Metropolitan Branch of the Association of Teachers in Colleges and Departments of Education produced a report[1] on Arithmetic in Primary Schools in 1940 and revised it in 1947. This gives in some detail the syllabus considered reasonable for the general run of children in Primary Schools. It covers the simple rules in number up to the beginnings of long multiplication and simple long division; in money the short rules only; in weight and capacity the same; in vulgar fractions to simple addition and subtraction with denominators not exceeding 24, and in decimal fractions, short multiplication and division by whole numbers. This is approximately the scope of the mechanical work upon which the better attainment tests mechanical arithmetic are based to-day.

A frequent experience in Grammar Schools is that Primary School scholars are too advanced in the technique of getting certain types of sums correct, yet have little intelligent understanding of fundamental arithmetical ideas. These ideas can only be developed by the use of concrete material in teaching arithmetical processes and the frequent application of these processes to everyday affairs. In the report mentioned above it states that in about a third of the arithmetic papers examined (apparently just before the war) the problem side was stressed; in a third the stress was on the mechanical side and the remaining papers were fairly evenly balanced between the two. The influence that this balance can have upon the Junior School work is noted. At a first inspection it would appear that the arithmetic tests in use to-day meet the specifications laid down here much more closely than those in use before the war. This is as far as content is concerned, but the conditions under which tests are worked is also important. This can be seen from an investigation carried out upon the results from a Moray House Arithmetic Test.

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[1] *Arithmetic in Primary Schools.* 1947. Longmans.

For many years now Moray House have been devising Attainment and Intelligence Tests for selection examinations, and these are very widely used. The arithmetic test consists of two parts, mechanical and problems, each with fifty questions and each with a time limit of twenty minutes. The ground covered conforms closely to the syllabus described above, and the problems are appropriate. The results of this test yield satisfactory results since they spread the children well and give a generally satisfactory distribution of scores. That is, when they are used according to the manual of instruction. To find out how far speed enters into these results a series of investigations were planned and carried out in Southampton schools.

Southampton children had been found, over a number of years, to react normally to the test as a whole, but when the time limit of each part of the test was extended a different picture was given. With a forty-minute time limit half the boys had 27 or more sums right, and half the girls 32 or more. One-third had 37 or more, and 40 or more, respectively. Well over ten per cent of each sex reached 46 or more. This distribution was of course so bunched towards the upper limit of marks that it was useless for selection. Then a smaller cross-section group was given unlimited time for the test; these average scores rose from (girls) 32·4 and (boys) 28 for the forty-minute test to (girls) 36·6 and (boys) 31·5. This should be compared with (girls) 25·05 and (boys) 22 for a larger group taking the twenty-minute test. Speed therefore appeared to be of overwhelming importance in the test scores. Given time, most of the children could make a very good showing with these tests; but the time factor so reduced their scores that a distribution useful for selection was obtained.

Was this a sound principle to work on? Speed has a place in arithmetic, there is no doubt about that, but surely it is only one of the factors by which success should be judged. Comparing the forty minutes and the untimed results it was found that whereas not one of a similar group of children the previous year had finished all the sums in a twenty-minute test, among this group 28 of 68 boys and 36 of 64 girls had completed all sums in the forty-minute period, although the number completing all sums dropped to 5 boys and 26 girls after forty minutes of the untimed test. This seemed to show that there was still a considerable but more reasonable time element in the forty-minute test.

An analysis of the gains in scores showed that these were not only due to more sums being attempted. The gains were also partly due to new sums being worked correctly, the remainder came from a balance between sums worked correctly in the untimed test which had been worked incorrectly before, and sums worked incorrectly after first being worked correctly. The interesting thing here is that the extended time from twenty to forty minutes and from forty minutes to the untimed test, at each stage, gave a steady increase of corrected sums over those initially correct but subsequently wrong. The effect of reducing the feeling of rush and tear thus seemed to be to enable the child to demonstrate his ability to do mechanical work more accurately than the twenty-minute test results appeared to indicate.

One of the charges that has often been levied against objective tests is that they place too much emphasis on speed. It is clearly true of this test. The schools have realized this, and hours have been spent speeding the children up. Has this time been well spent? Could it be better used? Speed, as has already been said, is an element in arithmetic, but surely a test that calls for excessive speed (and it would appear from this investigation that the shape of the distribution of the scores from this test results from a very restricted time limit) cannot be said to exert a good influence upon the Junior School work.

If it is agreed to keep in the test only a reasonable element of speed, such as the forty-minute test seems to offer, another problem presents itself. From this test too many children have high marks and therefore bunch towards the top; the usefulness of the test for selection is therefore much reduced. This could be solved by increasing the scope of the test by extending the syllabus on which it is based, that is, bringing in more difficult processes. This would demand a very considerable extension to be of any use. For the more able children perhaps this would not matter, but the eyes of many more than these will be on the selection test, so that the extension of the syllabus could easily injure Junior School work.

From a consideration of this problem arose the idea of a 'hurdle' test. There are some things in which every child passing to a more specialized form of secondary education should reach a satisfactory standard. Perhaps mechanical arithmetic is one of these. Perhaps we should keep the syllabus reasonable so that its over-extension does not hinder development in the Junior School and demand that children considered for, say, Grammar Schools should have shown that they have mastered this syllabus well. In this case, if the hurdle had been set at 40 out of 50 sums right in the forty-minute test, about one-third of the children would have cleared their hurdle. This would not mean that they would pass to Grammar Schools; a much smaller number than this would usually be selected, but they would have qualified on this side of the work. If this idea is accepted it means that the more detailed the selection from among these children as far as arithmetic is concerned would have to be done through problems.[1]

The problem side of the Moray House Test consists also of 50 sums to be worked in 20 minutes. These can be done in the head or worked in a space provided. Only the correct answers receive marks, no partial credit being allowed. When this part of the test was set without a time limit the speed factor gain was shown to be very important. The scores once again clustered towards the upper limits making the results useless for selection. In other words, once more, given more time, many of the children showed they could solve these problems with ease.

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[1] J. Sutherland has shown (B. J. P. Statistical Section V, 1952, p. 195) that the problem section of the Moray House Arithmetic Test is a better prediction of success in school than is the complete test. This reliance on problems seems therefore to be very fully justified.

It has been shown on many occasions that there is a close resemblance between the general placing of children in the same test whether it is set with a time limit or not. From this it has been argued that the imposition of a time limit does no injustice to the candidates. This, however, is only a general picture. The mark orders of 259 children from the twenty minutes and the untimed problem section were examined, and in 25 cases children had risen ten places or more within their own school groups. These 259 children were attending six schools so that ten places within each school represents much more than this in the group as a whole. They were distributed fairly evenly through the schools. When each case was examined it was found that the higher position in the untimed test appeared to give a fairer picture of the child's arithmetical ability as judged by his day to day work. In other words the results from the untimed test appeared to the teacher to be more just. Thus on the score of fairness alone a more reasonable time in which most children have a chance to show what they can do without undue haste appears to be a reasonable requirement. Once again, the effect on the Junior School work of relaxing the need for excessive speed would seem to be a desirable achievement.

This idea of timing the test so that many children can finish contradicts one of the tenets of test construction. The idea has been that if a child can finish with five minutes to spare he could still do more, and thus he cannot show how far he excels another child who finished on time. To some extent this is true, but if the effect of using this principle is to put more and more premium on speed both in the tests themselves and in the general work of the Junior School, then surely it is doing more harm than good. Better by far to depend upon the difficulty of the test items worked with a more reasonable time limit that does enable many children to finish.

Clearly Part 2 of the Moray House Test as it stands could not be used with an extended time limit because the results would be too bunched at the top to be suitable for selection. By including more difficult items towards the end of the test it is possible to build up a test of 50 items that otherwise is similar to Part 2 of the Moray House Test, and allowing a forty-minute time limit to obtain a distribution quite suitable for selection. Such a test is shown in Appendix A, pp. 120-1.

The picture then is of a mechanical hurdle test of forty minutes and a selective problem test of forty minutes. This certainly requires double the time for arithmetic testing, but if it is felt excessive it can be reduced by cutting down the number of mechanical sums and of problem sums to make two twenty-five-minute tests. Both lose a little by doing this, since the more ground a test can cover the better, but it has been found that efficient tests can be constructed with these timings.

Following these investigations in Southampton this speed factor in arithmetic tests has been reduced by the methods described here. This has met with approval of teachers, parents and children, who all feel the new system to be fairer. This is surely an important point in itself but it also helps to meet the argument that our methods of selection tend to pick the slick child rather than the thorough one. While not agreeing that our selection methods do this it is certainly better that they should not appear to do so. So much depends upon general confidence in selection results.

Another point that emerges from the investigation is that throughout girls have higher scores than boys. This is not peculiar to arithmetic tests, but shows itself in English and Intelligence tests also. This is not the place to discuss the reason for it, but the fact that it does happen is a strong argument for assessing boys and girls quite separately in selection procedures. Unless this is done, more girls than boys will come into the selected group and, while this appears to happen also at the level of the General Certificate of Education, it is not the case at the University level, where conditions are reversed. The wisest thing, therefore, other things being equal, would seem to be to keep the number of places balanced between girls and boys, and throughout to deal with each sex separately. This is simple to do and avoids what is otherwise a very real complication.

Whether we should ask Junior School children to work more complicated problems requiring setting out, is very debatable. To do so would concentrate the attention of the Junior Schools on the importance of this, but how far should such work be carried out in the Junior School? Because of the need for partial credits it also needs more complicated marking. If marks are to be given for presentation of the sum a subjective element is introduced. Some thorough investigation of the possibilities and effects of this needs to be undertaken before a decision is reached. At the moment it is largely a matter of opinion whether such tests are either desirable or necessary. In any case one danger for all problem tests, and especially for these, needs emphasis. The test must never develop into an array of type problems. If this happens, and it need not if sufficient ingenuity is used by those devising the tests, it will lead to drill on the types, and the object of seeing whether the child has the arithmetical sense to apply the simple mechanical rules will be lost. It is something, therefore, against which all those who compile tests must be on their guard.

Attainment Tests in English

Attainment in English is much more difficult to test than attainment in arithmetic. This follows from greater difficulty of drawing up a clearly defined syllabus in the subject. Arithmetic proceeds in an orderly sequence; English grows at many points at once. Attainment in it can be tested partly by the sampling of its elements, partly by testing the use that is made of the finished products. Thus the mechanics of reading, the comprehension of the written or spoken word, and the mechanics of written expression, punctuation, spelling and grammar can be tested by sampling. So can the more subtle elements of the meaning of words and phrases, the use of figures of speech and colloquial phrases. All these are susceptible to testing by means of suitably devised objective tests. The use of language as a means of continuous expression, either written or spoken, is much more difficult to test. The techniques for testing in these two main sections differ so widely that it is better to discuss them separately.

Early English tests consisted largely of formal work such as asking the child to give the plurals of words, to change a sentence from the present to the past tense, to give adverbs corresponding to certain adjectives and so on. These items could be marked objectively, but they could easily encourage a deadly drill approach to the subject. Modern objective tests seek to probe for real understanding and appreciation of the elements of language usage, seeking to do this in such a way that the responses can be scored objectively.

There are two main difficulties in constructing such tests. First, they cannot cover every aspect of the work, but must select those that appear to be most important. They can only sample the field, and the way in which the items, or groups of items, are selected can do much to influence the emphasis placed on the various sides of the work in the Junior School. This has its advantages as well as its disadvantages. Thus the importance of spelling can be stressed by its inclusion, just as the lesser importance of the more formal side of grammar can be allowed to sink in importance by its omission. It follows from this that test constructors must have clearly in their minds the main aims of the teaching of English in the Junior School. This of course applies to all tests, but especially so to English, where the need to keep the test a reasonable length makes selection from a wide field of possible items necessary but difficult. Roughly speaking, two sides of the sampling must be included. There is, on the one hand, that dealing with simple techniques such as spelling and punctuation, and on the other, that calling for evidence of the ability to comprehend words and phrases and use them correctly and to full advantage. What the latter should cover is largely a matter of opinion, but it can include selections of synonyms and antonyms, definitions, and the replacing of phrases by words, the use of forms of speech, the meaning of phrases, proverbs and colloquial expressions, and the correction of common errors.

The second difficulty is that if the test is to be marked objectively many of the responses must be selective rather than inventive; thus, instead of asking for the meaning of the word 'reliable' a number of alternatives must be placed before the child from which he can select. This has the advantage of making him consider a number of alternatives, but on the other hand it can lead to guessing and, what is more important, the child can, unless the alternatives are very carefully selected, answer correctly with only a superficial understanding of the key word. It is because of difficulties like these that many teachers object to the type of English paper now in use. The alternative is to set questions that require fuller inventive answers. If this is done the marking becomes subjective, and the marks given for an answer can vary considerably from one marker to another. While large numbers of papers need to be assessed evenly it is difficult to see how objective tests, that lend themselves to this, can be replaced by subjective tests. It may be possible to combat these objections by paying greater attention to the expression side of English, especially through the essay. Many selectors are already experimenting with the reinstatement of the essay as an important part of the attainment testing programme in English. Encouragement to set out along this path has come from the findings of recent investigations into making the marking of compositions more reliable. The position can best be explained by considering in general some of the earlier findings of research into this matter and in more detail some of the more recent results.

One of the first results of a scientific approach to examinations was the discrediting of the composition paper and the essay type of answer. As early as 1912 investigations carried out in America were making people begin to look to the dangers of subjective marking. Later many studies were carried out in France and England under the auspices of the International Examination Enquiry Committee. Ballard,[1] writing in 1923, when he could say 'the modern examination is dominated by the essay', pointed out that not only was subjective marking to blame for our failure to assess the essay fairly, but the variability of the child in handling this medium also needed to be taken into account. In 1924 Boyd[2] selected twenty-six essays on 'A Day at the Seaside' by eleven-year-old Scottish children, and these were marked independently by 271 teachers using seven grades. Almost every essay was placed by the markers in six of the seven grades, but there was a tendency for their placings to bunch round one grade. One of Hartog's[2] investigations in 1935 showed how the mark given by the same examiner could vary after an interval.

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[1] Ballard, P. B. *The New Examiner*. 1923. Hodder and Stoughton.

Such evidence as this naturally called for some serious thinking. To replace the essay examiners evolved tests that could be marked objectively. Composition was either thrown out altogether or attempts were made to mark this objectively too. One approach to this was to analyse the composition and award marks for each of its many 'parts'. The more objective these systems were made the more cumbersome they became to operate. An alternative was to have a series of sample essays at various levels and to 'match' a child's work to one or other of these, working mainly by impression. A series of such samples, although these are for age, are given by Burt.[3] After many ways of marking had been suggested Cast[4] carried out investigations to compare their effectiveness and found that whatever methods were employed the marks of individual examiners still differed widely.

In recent years there has been a growing uneasiness about the dropping of the composition and attempts have been made to find ways and means of bringing it back to use. Cast had shown that there appeared to be no 'best' method of marking;

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[1] W. Boyd. *Measuring Devices in Composition, Spelling and Arithmetic.* 1924. Harrap.

[2] P. Hartog and E. C. Rhodes. *An Examination of Examinations.* 1935. Macmillan.

[3] C. Burt. *Mental and Scholastic Tests.* 1921. Staples, pp. 423-6.

[4] B. M. D. Cast. 'The Efficiency of Different Methods of Marking English Composition.' *British Journal of Educational Psychology,* 1949 IX, pp. 257-9; 1940 X, pp. 49-60.

Hartog[1] had already shown that the method of general impression appeared to give as good results as more analytical and therefore time-making methods. Later[2] he produced results that definitely favoured the general impression method. This seemed to clear up one important point.

A number of recent investigations have shown that, if each composition is marked on impression by four markers, the average, or the sum, of the marks they award give a sufficiently reliable comparison between children's work to make the reintroduction of the composition paper fair to the children and a useful guide to selectors.

Evidence in support of this is somewhat technical. In 1949 Wiseman[3] showed that when four markers were used, working independently by impression on a 20 point scale, and working quickly (50 compositions an hour), the intercorrelation of their marks varied from ·46 to ·85.[4] When they re-marked a sample of papers the mark re-mark correlations were of ·946 and ·910. From this he concluded that if the papers were marked by a carefully selected group of markers, the resultant scores were sufficiently reliable to enable them to be used for selection.

Finlayson,[5] in 1951, writing on the reliability of essays, suggests that Wiseman's mark re-mark correlations, although they were a measure of reliability of marking, were not enough, since it was the consistency with which essays measured the same ability with which we were mainly concerned. Thus a study of a test re-test correlation between separate essays was required before the reliability of essays could be established. One hundred and ninety-seven children with a mean age of

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[1] P. Hartog and E. C. Rhodes. *The Marks of Examiners.* 1936. Macmillan.

[2] P. Hartog *et al. The Marking of English Essays.* 1936. Macmillan.

[3] Stephen Wiseman. 'The Marking of English Composition in Grammar School Selection.' *B.J.E.P.*, 1949 XIX, pp. 200-9.

[4] The association between two variables, such as two sets of scores, can be calculated and expressed as a number. This is called a correlation coefficient. If it is 1 there is said to be perfect correlation, that is, the two set of scores fit closely. If it is 0 there is no correlation. In a case like this a correlation of ·9 or more is satisfactory, and ·7 or ·8 are useful indications that the association is fairly close.

[5] Finlayson, Douglas S. 'The Reliability of the Marking of Essays.' 1951. *British Journal of Educational Psychology*, XXI, pp. 126-34.

12 years 1·9 months in Edinburgh schools worked two essays from parallel groups of four topics. Only 41·5% of the children chose similar topics from both groups. These papers were marked by six teachers and their results studied. A mark re-mark correlation of ·939 confirmed Wiseman's findings. Test re-test reliability for one marker was estimated at ·691, and for a team of six ·863. When the idiosyncrasies of markers and the day-to-day fluctuations of children were taken into account, the over-all reliability for one essay marked by three examiners was estimated to be ·786.[1] This rose for two essays to ·880. The ability employed in writing essays appeared to be something different from I.Q., E.Q., or scaled teacher's estimates of English. This reliability must be compared with the ·95 often found for objective tests, and show that the essay, as worked and marked here, appears to have a much lower reliability than we should like to see. However, it is not so low that we must rule it out entirely from selection procedure. Much would appear to depend upon the selection of suitable markers and the number of essays each child is called upon to write.

To sum up, although essays were rightly excluded from selection procedures on the findings of earlier research, or at best their influence in the procedure was reduced, more recent studies suggest that, given certain safeguards, they can be used effectively. Because of the importance of laying stress upon written expression in the Junior School this conclusion is important and encouraging.

One further point. It appears that essays may measure some things different from the Moray House English Test,[2] and Wiseman has recently shown that reliably marked essays forecast success in written English in Grammar and Modern Schools rather better than objective English tests.[3]

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[1] Wiseman, S. *Problems connected with the Selection of Children for Secondary Schools.* 1952, Unpublished Thesis (Manchester) has found a test re-test reliability of .894 when the same team of four markers is used.

[2] Although Bagley, E. H., *A Study of the Abilities Involved in English Composition*, 1951, Thesis (Manchester), appears to have found the same pattern of abilities in both essay marks and the results of other objective tests of English.

[3] Wiseman, S., ibid., p. 29.

In his notes for markers Wiseman suggests that the markers should look for signs of original thought in the composition. In this he is departing from the more usual idea of treating a composition as a test of the ability of the child to express himself clearly and competently. It adds to this the idea that, in a composition, a child displays himself and that it is possible therefore to assess more than his powers of expression. Whether this is possible or desirable is a matter of opinion. Clearly the exact policy that examiners should follow in this matter needs careful discussion before marking commences, so that all may set out with the same objects in mind.

The position then would seem to be that reasonably reliable marks for composition can be obtained provided that all the scripts are marked by a number of markers—possibly four would suffice—each working independently and quickly on impressions, with agreed objectives in mind. The marks from the examiners for each essay would be pooled, by taking an average, or more simply by adding them, age allowances being computed in the usual way. As shown above, Ballard felt that the variability of the child in handling essays also needed to be taken into account. No serious research on this has been reported, but it may be that to do the child full justice a number of essays, possibly of varying types, should be written at intervals. This again would seriously complicate the marking. Clearly, in a large Authority with several thousand scripts, or even a small one with only several hundred, the handling of all scripts by each marker, the multiplication of markers and then the multiplication of essays present a very great problem. It may be that this can be solved by marking only those scripts round the border line, or by marking only the scripts of say the upper thirty per cent of the candidates as judged by some other criterion, possibly using the result of the objective test in English. Some limitations such as this would reduce the number of scripts considerably.

Another approach might be made through the selection of sample essays at various attainment levels in much the same way that Burt (quoted above) produced sample essays at various age levels. This might help to keep the marking more uniform, but it is doubtful if even then Wiseman's speed of 50 essays an hour, which the investigators have found reasonable, could be exceeded. In fact all that would be happening is that an agreed standard replaced a personal one derived from each marker's interpretation of the mark scale. It might even slow up marking, especially of the earlier scripts.

An alternative that is being used in one case at least, is to make the composition a qualifying test or hurdle, as has been suggested for the mechanical arithmetic test earlier in this chapter. That is, a child would not be considered to have qualified for entry to a Grammar School unless his powers of expression reached a certain level. Agreement upon this level would not be easy but, if this were attained, it would be a comparatively simple matter to pick out those well above and below this level, and concentrate a full team of markers or assessors on a smaller group of doubtful case. This method, however, would hardly give the full weight to the essay that many would like to see. It can be considered as a means for avoiding some of the difficulties of marking rather than a satisfactory solution to the problem.

Mention was made earlier of the selection of appropriate topics and much might be said about this. They must be suited to the age and interests of the children in any case, but a larger question is involved. The composition is both a means of expression akin to painting and three dimensional art, but it is also a skill that is the handmaid of subject teaching. To take an extreme example: Can the child who lets himself go and writes a flowing and apt essay on spring, also marshal his arguments in a discussion on the causes of the Wars of the Roses? He will need to do both in the upper forms of the Grammar School if he is to succeed. Does an essay that smacks of the former measure his ability to cope with the latter? Probably it does. Ability to express ideas and facts of any kind may have so much in common that any test may have a very general application to all written material. This requires investigation. If it is not so, we may have to think very hard about the need for 'informational' essays as well as the more free-flowing essays, whether imaginative, descriptive or narrative, that we usually associate with the selection procedure.

Written expression is so important a skill that it would seem to be essential to reach some solution to this problem. We know enough now to show the way in which reasonably reliable marks can be obtained. It should not be beyond the wit of those guiding selection procedures to find ways and means of overcoming the administrative difficulties.

To sum up, there would appear to be five general headings under which the testing of English can be considered. Mechanics, such as spelling, punctuation can easily be covered by the use of objective tests. English usage, mainly the correct, grammatical and effective use of word and phrase, can also be dealt with by objective tests, although there are some difficulties which have been discussed above. Reading for comprehension, the only aspect of reading that really concerns us at this stage of the child's development and for this purpose, also responds to objective test treatment. Composition can be used for selection with the safeguards mentioned above. The only section that does not appear as yet to respond easily to our efforts is that dealing with inventive written responses to the sort of situations that often arise in school: the brief factual note; the brief answer to a question; the summary of the main points of a lesson. It may be that the rest of the testing covers this. It is certainly an aspect of testing English that needs further study.

Most local authorities use objective tests in English and arithmetic in selection, and many have reintroduced composition also. Usually there are just the three papers, but in some cases the papers are split, for example, into mechanical and problem arithmetic, while in others, more than one series of attainment tests is taken and these are spread over several years.

When two or three similar tests are set at intervals of some weeks or months, the object is to use the results as a check upon each other. Clearly, each series covers much the same field, and all the repetition can do is to check the consistence of the children's response to the tests. Unless the tests are very unusual in form and, if they have been carefully standardized, there seems to be little advantage to be gained from this. Where the tests are varied so that they give a different approach or cover a different field, there is more value in the repetition. In some extreme cases a testing programme spread over three or four years is built up from standardized tests suited to the age of the children at each stage. In this way each child's attainments can be seen as he comes up to the Junior School. If such information is found of value by Junior School teachers in guiding the child through the Junior School course, there is much to be said for periodic testing, but for selection alone, when the information at the time of transfer is all-important, a broadening of the field covered by the testing at this stage would appear to be far more important than any historical record, however full it may be.

Some methods of selection use no attainment tests, but rely upon internal school examinations, or teachers' estimates of the children's relative attainments, for information about the standard of work in these two subjects. Such methods will be discussed later. But no selection procedure omits attainments altogether from its survey and most give considerable prominence to them because it is felt that success in school work in the past can be reasonably expected to give a fairly shrewd forecast of success in school work in the future.

CHAPTER IV

INTELLIGENCE TESTS

INTELLIGENCE tests are looked upon by some selectors as the king-pin of all selection procedure and by some critics as so much psychological mumbo-jumbo. As usual, the truth appears to lie between these two opinions. Assessment of general intelligence is only one of the processes by which a picture of a child's abilities can be built up. It is certainly an important one since intelligence test scores seem to give a relatively reliable forecast of a child's later success in school work. In fact, the main argument for the use of intelligence tests in selection procedure is that they do seem to be able to pick out the right boys and girls. Just as they have proved valuable in selection for special courses or special posts in industry, commerce and the armed forces, so, many investigations[1] have shown their value in helping to select the right children for Grammar School education. Because their effectiveness has been so often proved, they are included in the selection procedure of practically every local authority in this country.

There is, however, an element of mumbo-jumbo since nobody has yet satisfactorily explained the 'general intelligence' that they are said to measure. In fact, the symbol 'g' used without precise definition is preferred to any phrase such as 'intelligence', 'general mental ability' or 'general intelligence' by most psychologists. But here the charge of mumbo-jumbo finishes, for there is no doubt that intelligence tests serve a very practical and useful function in selection. What this function is calls for a little discussion.

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[1] e.g. W. McClelland. *Selection for Secondary Education*. 1945. U.L.P. W. G. Emmett. *An Enquiry into the Prediction of Secondary School Success*. 1942. U.L.P.

In the early days in intelligence tests the Intelligence Quotient (that is the relationship between the child's mental age as shown by his intelligence test score, and his chronological age) appeared to be constant throughout his school life and was considered to be a measure of his innate general ability. Within certain limits, and for the majority of children, this is a useful generalization, although we now know that a child's changing background can be reflected by an apparent change in his Intelligence Quotient and the ability that intelligence tests measure is no longer considered to be as purely innate as was once held to be the case. Thus a child living in poor cultural surroundings, with restricted chances of broadening his general experience, may show a lower Intelligence Quotient than his true ability merits. Remove such a child to a more varied environment and his dormant abilities may be stimulated. This may be reflected in an increased Intelligence Quotient. Similarly health may affect the child's score on an intelligence test and give a false reading of his real ability. These are, however, exceptional cases, and taking things by and large we can say that in the large majority of cases a child's Intelligence Quotient is fairly stable, is indicative of his all round and possibly innate ability to tackle problems such as those he meets in his school work, and, as we have seen above, is a useful indication of probable success or failure in a Secondary Course.

The first intelligence tests, those of Binet and Simon, were time-consuming individual tests. Such tests have been further developed, notably by Terman and Merrill,[1] and now form the mainstay of much individual investigation. Group tests are more practicable for selection purposes, although their results are admittedly rather less satisfactory than individual tests. The fact that it is possible to apply them to children in mass, and the fact that they give a very useful approximation to the results of individual tests, has led to their adoption by selectors.

Broadly, group intelligence tests are of two main types. There are those set out in words, and those that use pictures or patterns. Both types of tests appear, generally speaking, to measure the same thing, although naturally those that use language as a medium also test the use of words, just as those in the other group must also test, to some extent, the child's grasp of pictures and patterns. Probably those using words are most useful for selection for secondary education, since they link up more closely with the essentially verbal nature of instruction in all secondary courses, whether they are of the Grammar or the Technical type. There is some indication, however, that some children who do well in one type of test are less successful in the other, and that is why at times both types of test are included. This may be helpful if it is remembered that both give indications of general mental ability, general intelligence, or 'g', whichever we prefer to call it, and not of some differentiation between Grammar and Technical aptitudes. It is important that non-verbal intelligence tests should not be confused with the spatial tests which are linked with practical aptitude.

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[1] L. M. Terman. *The Intelligence of School Children.* 1921. Harrap.

The Intelligence Quotient is found by dividing mental age by chronological age and then, to avoid using decimals, multiplying the result by 100. This is a laborious business and therefore the more humane test constructors provide a simple conversion table from which, once the score and chronological age are known, the Intelligence Quotient can easily be found.[1] Naturally where mental and chronological age is the same the I.Q. will be 100, and since this will tend to be the average position among the population, 100 can be looked upon as the mean for all intelligence tests. The spread of marks above and below this will, however, depend upon the idiosyncrasies of the test itself. This makes it difficult to compare the results from two tests, for, although 100 implies the same position in both, 110 in one may be represented by 115 in another. Because of this the results of many tests to-day are given in standard scores. In these 100 is always the mean and the standard deviation (a measure of the spread of scores that is explained in any book on simple education statistics) is 15. The result of tests other than intelligence tests can also be expressed in standard scores. Thus all Moray House Test results can be compared directly one with another because all are standard scores. The advantages of this arrangement are obvious. So are the disadvantages and pitfalls of comparing ordinary Intelligence Quotients. For example, in one group of boys, a Moray House Standardized score of 115 corresponded to an Essential Intelligence Test Form B Quotient of 125 and a Cattell Scale II Form B Intelligence Quotient of 135; thus clearly the interpretation of Intelligence Quotients is no simple matter.

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[1] Where such tables are not given, that compiled by Mager and published by Oliver and Boyd as *The Tweeddale I.Q. Conversion Tables* is a great time saver.

Even the use of standardized scores with their controlled spread does not solve all the problems. Another difficulty arises from the fact that an intelligence test is not a perfectly reliable measuring instrument used to measure something that is perfectly steady and constant. Taking the test first, the more reliable tests such as Moray House, Essential A and B Forms, Simplex and Simplex A show a correlation between test and re-test of up to 98. This is very high; but it is not perfect. It means that we can expect a variation of several points of standard score from test to test for most children. In a reasonably reliable test such as those mentioned above we shall expect half the children in a fair-sized sample to have their two scores within 4 points of each other. In less reliable tests this variation may be increased to 8 or 10 points, thus making them very unsure tools. Thus it is important to know the test re-test reliability of tests that are being used. This should never be lower than ·9, and the higher it is the better. Even then there are bound to be slight but important variations, and the result of one group intelligence test should never be taken on its face value. This is an argument for giving each child more than one such test.

Not only is the test not an exact measuring instrument but also the general intelligence, general mental ability, or ‘g’ that is being measured has its own tendency to fluctuate from day to day. We all have ‘off’ days that may be due to a variety of reasons, when we do less well than usual. These can and do affect test results. Here is another reason for tests taken on more than one occasion. All these difficulties show themselves in attainment tests also, but intelligence tests are peculiarly liable to another difficulty which can seriously affect its usefulness.

Soon after group intelligence tests began to be used extensively evidence began to come in that when children repeated a test several times their scores rose. Thorndike[1] suggested that this effect could be combated by using a short practice test to make the children accustomed to the test material. Most intelligence tests to-day have such a short preliminary test that is used as a shock absorber and is not marked. More recently the question of deliberate coaching as well as practice has been further investigated and it would appear that this simple practice test is not enough. Thus in an extensive experiment carried on in Southampton it was found that when children were set a number of Moray House Tests at weekly intervals children's standardized scores rose for the first four tests by an average of six points, and then remained fairly steady or tended to drop slightly. When children were coached between each testing for one period of forty minutes only, a rise of the same size was found by the fourth test, but this rise continued to the sixth test, by which time the average increase was nine points. Then, as in the case of the practice, the scores remained steady or fell away slightly. From this it does appear that both practice and coaching on parallel tests can increase a child's score in a subsequent test. The interesting thing is that this increase seems to be limited and results from a comparatively small amount of either practice or coaching. Since books are readily available from any bookseller through which such practice or coaching can be given, the problem of some children being coached and not others is a very real one that must be faced. To forbid all coaching in schools does not seem to meet the case, since anxious parents can help outside. The alternative is to provide for coaching on the limited scale that appears to be necessary in the school itself. It would appear that four periods of forty minutes should be enough; after this scores are likely to drop and then over-coaching would defeat its ends.

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[1] E. L. Thorndike. *Journal of Experimental Psychology.* V, 1922, pp. 101-10.

The reason behind this limited rise in scores after coaching would seem to be that put forward by Thorndike from his early observations. The child becomes familiar with the peculiarities of this new sort of test and lines his mind up with the sort of problem the test presents to him. It is natural that he should need the process of familiarization and that his score should settle down once the process has been accomplished. There is just the chance, however, that the very fact that the style and problems of the test are not familiar is a challenge to intelligence. In fact adaptability to new conditions has been said to be one of the main components of intelligence. The loss of this may affect the prognostic value of intelligence tests. This has still to be investigated. There is some indication, however, that intelligence tests tend to correlate more highly among themselves after coaching. This would suggest that they are likely to do their job better and not worse as a result of coaching, but we have much still to learn.

The effect of coaching for one type of intelligence test does appear to have some effect on the result from other intelligence tests. The effect is much less than that shown in the coached test, but it is enough to make an appreciable difference to the scores. Coaching effect appears to wear off fairly quickly, and the effect of coaching appears to be to increase the child's insight into what the test requires of him rather than to increase his score by increasing his speed of working.

A number of other investigations into the effect of coaching and practice upon intelligence test scores have been reported recently. Since a lively controversy is developing it may be wise to summarize some of these reports here, pointing out their main trends. Generally speaking, the findings are in agreement with the results of the Southampton experiment, but there are one or two important differences.

Wiseman,[1] working in Manchester in 1951 with primary school children of 9 plus, found gains of 4½ points for his

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[1] S. Wiseman in a letter to *The Times Educational Supplement*, March 7th, 1952.

Jammu & Kashmir University Library.
Accession No.

control group; 9½ for his practice group after 5 tests, and 6½ points after 6 one-hour coaching periods. Published books of tests were used for coaching. He found that the gains from practice tended to increase with level of ability, but in the coached group the greatest gains were made by the duller children. He also reported a marked difference between the effectiveness of different coachers.

The National Foundation for Educational Research have reported[1] the results of investigations carried out between 1950 and 1952. The team found, among other things, that coaching raised the average scores of groups by five to nine points, and that almost all this gain resulted from three hours of coaching. But they also found practice at least as effective as an equivalent period of coaching. Boys appeared to benefit more from coaching, and girls from practice. Their findings led them to suggest that at least two practice tests of intelligence should precede the test used for selection and that universal coaching is both undesirable and unnecessary.

Vernon[2] has summarized the results of forty earlier researches and the findings of a number of recent researches carried out by D. T. Navathe and himself. From all this he estimates the rise after coaching on the average at 14 points.[3] Apart from this much greater rise his findings agree in general with the results of the other recent investigations.

The main fact is that both practice and coaching result in increased scores. There is some evidence that the effect from coaching is greater than that from practice, although the Foundation team suggest that the results from each are similar and therefore advises against coaching. It is difficult to see why this should be so, and explanations of it would necessarily be very tentative.

Following the 1951 investigation in Southampton a limited amount of coaching was given in 1952 and in 1953. In 1952, after taking one Moray House Test, children studied their results for one lesson a week for the next four weeks and then took another Moray House Test. Average scores increased from the first to the second test by only 4·3 points for boys and 5·8 for girls. This was less than had been expected. In 1953, after the first Moray House Test and two coaching periods, a second Moray House Test was taken and then two more coaching periods were given before the final Moray House Test. The average increase was then 7·7 points for boys and 8·7 points for girls. This sandwich of practice and coaching appears to enable children to settle down to the test and to bridge more nearly the 9 points gap which would appear likely to divide the coached and uncoached groups. In other words, it seems to give all children an equal chance once more.

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[1] A. F. Watts, D. A. Pidgeon and A. Yates. *Secondary School Entrance Examinations.* 1952. Newnes.

[2] P. E. Vernon in *The Times Educational Supplement,* January 2nd and February 1st, 1952.

[3] Vernon later modified this and suggested a rise of 11 points. *The Times Educational Supplement,* April 24th, 1953.

Emmett[1] has estimated the degree to which true order of merit would be affected by a gain of five to nine points and has shown this to be slight. Once more we must go back to the individual child and his parents. Coaching or practice may have only a slight general effect on order of merit, but some individual boys and girls will be affected. If practice and coaching do enable children to increase their scores and show themselves to greater advantage, then they must in fairness be given this chance. If the Foundation team is wrong and coaching gives a greater increase than practice, then they must in fairness be coached. Practice will never deter parents from coaching their children; if it is shown that the children are given an adequate, although small, amount of coaching in school, then private coaching will tend to die out or at least its unfair effect will be nullified. The results of further investigation will be awaited with interest, but there does appear, at the present time, to be a prima facie case for a limited amount of coaching for intelligence tests in school.

Coaching brings with it a number of practical problems. Tests are not constructed for these increased scores and may have not enough head-room to prevent children's scores bunching towards the top of the scale. That is, they are unable to give sufficient discrimination just where selection needs it, among the better children. Also, of course, the standard scores of, say, the Moray House Tests are completely upset by coaching. The mean will no longer be 100 but possibly nearer 109, and new means and new conversion tables are needed if the results of coached tests are to be compared with others.

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[1] W. G. Emmett. *The Use of Intelligence Tests in the Eleven Plus Transfer Examination.* 1952. U.L.P.

Coaching appears to be necessary in fairness to the children taking the tests, but it certainly brings many problems in its wake. The results from intelligence tests have proved themselves so useful in the past, however, that it would seem essential that they should be solved and the administrative difficulties overcome, so that, in their new form, they can continue to serve their purpose.

One solution to the problem that has not yet been fully explored lies in the fact that some type of intelligence test items appear to be less susceptible to coaching than others. The possibility of developing an uncoachable intelligence test would therefore seem to be within the bounds of practicability. It would certainly avoid the many complications of coaching and would therefore be a most desirable solution to the problem.

Reasons for using more than one group intelligence test have been given in several places above. Just as the ship's captain does not depend on one chronometer, so the wise selector does not, or should not, depend on one group test of intelligence. There should be at least three, but opinions are divided as to whether these should be parallel tests or different tests, and how they should be spaced. Parallel tests plumb the same or similar depths each time, but different tests do mean a varied approach. Perhaps both verbal and non-verbal tests should be used, although girls appear to find non-verbal tests more difficult than do boys. Again, although the test re-test reliability of non-verbal tests taken by boys is similar to that for verbal tests for girls, it is lower than for the boys' verbal tests. The wisdom of including non-verbal tests is therefore doubtful. The difference in the reaction of boys and girls to non-verbal material is also a difficulty in tests using both verbal and non-verbal items, especially if boys and girls are considered together.

Of the authorities who use more than one group test of intelligence some crowd their tests into a few days, while others spread them over as much as four years. There are advantages in both these methods but perhaps, as usual, a compromise is best and a spread over one year has its special advantages. If parallel tests are used there is bound to be an appreciable practice effect. With three Moray House Tests spread over a few weeks this will be about 5 points. If contrasting tests are used it would appear that this practice effect is reduced considerably. If there is coaching before testing then there is naturally no need to bother about practice effect, since it is absorbed by the coaching.

Since, as has been shown above, there is such possibility, quite apart from practice effect, of variation between a child's intelligence quotients or even standardized scores from a series of tests, it is perhaps wiser to express all such measures in terms of grades derived from the result of each test. Suppose the Grades A upper 5%, B next 25%, C next 40%, D next 25% and E bottom 5%, often used for such assessments to teachers' estimates, are adopted. Then it is a comparatively simple matter to marshal the distribution of the intelligence quotients on standardized scores from any test, and then calculate the limits of the grades from this distribution table. This does two things: it makes the grades from various tests at once comparable irrespective of the variations between original intelligence quotients and standardized scores; at the same time, except where the differences between a child's scores spans a grade border, it makes minor variations between scores vanish. There is no need to keep to the grade divisions mentioned above. They can be taken at any interval and there is much to be said for a 10% or even a 5% division. Such divisions show that the majority of children's results are fairly stable and indicate any children whose intelligence level needs more detailed study. Adding or averaging does not achieve the same result. A ship's captain does not add or average the times shown by his chronometers, since by comparison he can detect the faulty one from those he can depend upon. Similarly where two grades out of three agree, but the third does not, then it is safer to take the result from the two and discard the third. Adding or averaging would obscure this.

When all grades disagree violently, then the level of intelligence needs further checking. This can be done either by using additional group tests or by turning to individual tests. The latter is more lengthy but more satisfactory, since it is generally agreed that such tests are more reliable. They also give an opportunity for more careful study of the child by the tester. The test that would usually be used is the Terman-Merrill and there are some points about it to be remembered when comparing its result with the standard score from a group intelligence test. These are somewhat technical and consideration of them is therefore postponed until certain other technical matters are dealt with, in Chapter VIII.

Enough has been said in this chapter to show that the intelligence test part of selection is more than the working, scoring and recording of a single group intelligence test. Tests must be carefully selected, a pattern of testing planned and then the results must be considered with a knowledge of the variations that can be expected in such results. In addition, as recent investigations show, it is probably necessary to provide for coaching. Doubtful cases, especially round the border line of selection, may also need checking by individual tests. This does not mean that so far there is any one 'best' way of planning and using intelligence tests. There is still a wide field for research into everything to do with such tests, but at least we have learnt enough to realize some of the pitfalls in their use, as well as to appreciate the valuable part they can play in selection.

CHAPTER V

THE TEACHER'S CONTRIBUTION

IN a way, this chapter should have come earlier, since the teacher's contribution to selection should naturally be fundamental. As has been said already, the difficulties in using teachers' assessments lie in their subjectivity. It is just this subjectivity that makes it easier to discuss the teacher's contribution against the background of objective testing that has been described in the last two chapters.

Every teacher is an individual working in the atmosphere of the standards of his own school. Schools' standards vary; teachers' standards vary; and the variation in the assessment of children by their teachers reflects this double source of variability. While the more specialized Secondary Schools draw their children from a number of Primary Schools something must be done to overcome this variability. It is no answer to ignore the teachers' assessments since they are far too valuable to be brushed on one side. In fairness to both child and teacher we must find ways of overcoming the difficulties which we must never underrate. Ways must be found of pegging teachers' assessments if they are to be used as fully as they should be.

The easiest field to explore first is that of attainments. With his constant contact with the day to day successes and failures of the child, the teacher should be the best judge both of the child's general standard of attainment and the relation between his attainment and that of his fellows. There would appear to be at least three ways of striving towards objectivity in the use of teachers' assessments of attainment. The first is based on the use of gradings similar to those suggested for intelligence test results in the previous chapter; the second is the scaling of teachers' marks against an independent criterion; the third is implied in the quota system.

In the first the results of attainment tests are expressed in terms of grades, possible on the A-E formula described above, and then teachers are asked to assess their pupils in terms of grades based on similar proportions. There are several difficulties. The general standard of attainment varies from one school to another and within each school from year to year. Thus one school may draw its children from an area in which the general intelligence of the children, that is, their potentiality for attainment, is high, and another from an area where this is low. Again, schools, like vineyards, have vintage years. It has been found that teachers as a whole can adapt their percentages under the various grades to meet these difficulties in a remarkably able manner; but there is always the new teacher, or the new Head for that matter, whose idea of objective standards are as yet fluid. Children can suffer in consequence. A second difficulty is in the small country school where the amount of comparison within the school is so limited that assessment in grades such as these is almost impossible.

The next step would appear to be to take the assessments within the school, and seek to make them objective by comparison with some external assessment. It is a comparatively safe and simple matter to ask the teachers in a school to place their children in order of merit for, say, arithmetic and English. Then this can be compared with the order of merit obtained from objective tests in the same subjects and each child's final assessment expressed in terms of this comparison. Suppose the arithmetic test results are graded A-E as above, and in a particular school there are 4 children graded A, 20 graded B and so on. Then if the teacher's order of merit for arithmetic is examined and 1-4 are graded A, 5-24 graded B and so on, then a direct comparison based on an objective assessment that is the same for all children being considered for selection can be made. A child with B in both would be placed in B; a child with A from the school and B from the test could be called B+ or A−, and so on. The resultant categories would reflect equally the teacher's and the test's assessment of the child.

If a numerical rather than a graded assessment were preferred one of the methods by which teachers' marks can be scaled against the criterion of the objective test scores could be used, and the composite marks obtained from adding these two scores would contain both components.[1]

This method of bringing the teacher's estimates of the child's attainments into the picture can be called a checking rather than a replacement system. The objective test results still play their part in the assessment, but some may prefer to do away with the attainment test entirely. If this is so, some other criterion must be used. The other two methods mentioned here have this principle as their basis.

The first has been used in Lincoln[2] for many years. No attainment tests are set but teachers supply class lists in English and arithmetic. These marks are based on the children's normal work in class and in examinations over a considerable period. The children have already taken two Moray House intelligence tests and the English and arithmetic marks are scaled against this. In each class the Intelligence Quotients, arranged in order of merit, are divided into groups of five and the average is found for each group. The same is done for the arithmetic marks. The averages for Intelligence Quotients and arithmetic scores are then graphed against each other, and a smooth curve drawn in, and this used to adjust the arithmetic marks to the same scale as the Intelligence Quotients. The same is done for the English marks. This forms the basis for selection although other facts are ascertained and used in the final picture.

The main difference between this and the previous method is that the attainment scores are scaled against Intelligence Quotients instead of against attainment test quotients. The first method gives a clearer picture of different aspects of the child, whereas here the Educational Index, as the combined arithmetic and English scaled score is called, is affected by the range of the Intelligence Quotients. Moreover, the whole system rests on intelligence test results, and these, as we saw in the last chapter, are not always as clear and precise as we should like them to be. It is perhaps better to use the results of intelligence tests as one piece of evidence, rather than make other evidence depend upon these results, and thus spread rather than restrict any inaccuracies there may be.

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[1] The theory and practice of scaling is fully discussed in D. M. McIntosh, D. A. Walker, and D. Mackay: *The Scaling of Teachers' Marks and Estimates.* 1949. Oliver and Boyd. See also McClelland, W. *Selection for Secondary Education.* 1942, p. 41. U.L.P. A method more suitable for areas where there are a number of small schools is given by A. F. Watts in *Research Memorandum No. 1* of the National Foundation of Educational Research.

[2] Sutcliffe, A., and Canham, J.W. *Selection for Secondary Education without a Written Examination.* Murray. (Out of print.) Less detailed account in *Education,* MCIX, No. 2563, March 7th, 1952.

In practice it is reported that this method gives satisfactory results and has the teachers' confidence. This is probably due to the extreme care that is taken with border-line cases, rather than to the scaling of attainment scores, but possibly the same could be said of the majority of procedures, since almost any method selects the certain Grammar School group; it is the border-line group that gives the trouble.

The third method is that first suggested by Valentine[1] and advocated by the N.U.T.[2] and called the Quota system. In its simplest form all children take an intelligence test; the distribution of these I.Q.'s is studied and a pass mark is fixed; each school is then given a quota of places according to the number of children in the school with I.Q.'s above this pass mark. Then each school fills its quota, basing its selection upon the teacher's knowledge of the children in the group.

In practice this method is usually modified. Thus in one area where one form of the Quota system is used the I.Q.'s are available to the schools for their guidance. An order of merit list, drawn up before the intelligence tests are worked, and internal examinations taken after, are also brought into the decision. In another area order of merit lists and intelligence test results are compared, and then cases of disagreement passed to an asesssors panel to decide. In a third case the quota is fixed on the sum of Moray House Intelligence, Arithmetic and English Quotients, and filled after comparison between these results and an order of merit list compiled by the school after the I.Q.'s have been made known. This comes much nearer to the checking process which will be described later, and the fixing of a quota seems to be an unnecessary restriction.

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[1] C. W. Valentine. *Examinations and Examiners.* Birmingham, Bunters Ltd. 1938.

[2] Report of a consultative committee appointed by the executive of the National Union of Teachers: *Transfer from Primary to Secondary Schools.* Evans, 1949.

The main objection to the pure Quota system is that it places too much weight on the intelligence test. By modifications such as those mentioned above, some of this objection is overcome, but the quota still places a restriction on the number of places to be offered in a school that may easily be false because of the vagaries of the group intelligence test. While our tests are fallible, and it would appear that they must always be so to some extent, it seems wiser to try to keep the information each gives separate rather than relate it all to one fallible set of results. The Quota system is too like putting all our precious eggs in one not too substantial basket.

The difficulty about teachers' estimates of children's attainments is not getting them from the teachers but balancing them up and bringing them satisfactorily into the selection procedure. Some ways in which this is being done have been discussed. None of these is entirely satisfactory, but they all have their merits and in any case they do bring the teacher into the picture, and that is very important indeed. Any procedure that does not use as fully as possible the teacher's knowledge of the child's attainments, is ignoring the most important source of information about him. In addition, it can hardly hope to have the teacher's full confidence and support.

But the teacher knows more about the child than his attainments. He sees him in the round, and can tell us something of his other qualities. These can be divided into interests, special abilities and temperamental qualities, to which must be added the teacher's knowledge of the child's background, that is, his health, home and history, and his standing in the school. Interests and abilities need a special chapter to themselves, but the rest can be discussed here.

It seems highly improbable that we shall ever discover satisfactory tests for temperamental qualities. Even if we do in the future, at the moment we are dependent, except for indirect evidence, upon the teacher. The indirect evidence is not unimportant. Thus a child's attainments must needs be some measure of his powers of application to his school work, in fact, of his whole personality, and therefore to this extent we have some general picture of him. Moreover, a comparison between his I.Q. and his quotients for English and arithmetic can tell us whether he is working up to his capacity, although, if he is not, they cannot say why. The reason for any failure can best be explained by the teacher. Thus in some way or another the teacher must be brought in again.

If we ask for a character study of each child, both the teacher and the selector can perhaps best be helped by having this under certain headings. Elaborate schemes of headings are sometimes used. For example, on the National Foundation of Educational Research's Record Card (Junior), teachers are asked to comment on the following temperamental qualities:

Prevailing attitude
Self-confidence
Self-criticism
Sociability
Co-operation
Perseverance
Conscientiousness

In each case they are asked to consider their group to be divided into A-E group in the proportions mentioned above (5%, 25%, 40%, 25%, 5%) and a brief pen-picture is given of each grade for each trait; thus, for Co-operation:

E	D	C	B	A
Churlish, sullen, not co-operative.	Reluctant to co-operate; needs stimulus.	Normally co-operative; helps when called upon.	Ready to co-operate; often finds opportunities.	Invariably co-operative and helpful.

This give a very helpful guide, but in addition to temperamental qualities, six special abilities, and five noteworthy activities and interests must be graded with equal care. This is an imposing, if not impossible, task, and even when the teacher has dissected the child's characteristics and displayed them according to this formula, it is no easy task for the selector to piece them together again to give a balanced picture. To start with then, it appears to be wise to restrict the work by ignoring the normal, forsake the gradation of a five-point scale (are personality traits normally distributed anyhow?) and ask only for indications of striking deviations. We need to know if a child is especially painstaking, conscientious or persistent on the one hand, or notably indolent, erratic or careless on the other. A simple method of setting down such facts as these will be discussed in Chapter IX, where Record Cards will be dealt with more fully.

Information about a child's background should also be available to the selector. Health, home and history have been mentioned above, and these three may well be considered in more detail. Important health facts that have a bearing upon a child's success in school work must be known. The child who suffers from asthma; is partially deaf; or has had long and frequent absences from school because of ill-health, should have these on record. A complete medical report is not required; only the special points, if any, need to be stressed, so that again we are asking for a record to be made only in exceptional cases. The same applies to home conditions. Where circumstances, broken home and the like, hamper a child, we wish to know of it, but we also wish to know of the home that supports and encourages a child in his school work. Here we have to be careful of poking and prying into private affairs, but all teachers who really know the children and study their problems can supply the information needed here without unnecessary investigation. In any case, once again, it is only the exceptional that is required on the negative side, and on the positive side, that of the helpful home, no difficulties should arise if the term helpful is liberally interpreted.

A child's history is again a matter about which only the unusual needs to be recorded. The child who has changed schools many times; has been educated partly abroad, or has suffered from emotional hindrances in his school life should have this fact recorded for him. It is under this heading too that attendance records may be of use, but yet again, only long absences or very irregular attendance need to be shown.

The teacher's contribution falls into two parts. First there are those facts he can supply about the child's work which can be built into the selection procedure; then there are those opinions about the child himself which can be so valuable when studying individual cases. Appropriate methods are needed to ensure that the former can be used with other objective data, and the latter recorded so that they are readily understood and simple to use.

CHAPTER VI

INTERESTS AND APTITUDES

IN this chapter we shall be considering selection for secondary education as a phase of educational guidance that leads gradually to vocational guidance. So far we have been mainly concerned with selection for Grammar Schools, but when we turn to interests, and more especially to aptitudes, we need to have in our minds a wider range of secondary education provision. There is no need for any precise pattern to be laid down here, but naturally the main heading of Technical at once comes to mind, as one possible alternative to Grammar. Anyone who tried to forecast the exact shape of secondary education even twenty years hence would be working very much in the dark; but there is nothing to stop us trying to see on what sort of evidence selection for various forms of secondary education could be based.

Can the interests of a child help us to guide his future? This depends, among other things, upon whether interests are sufficiently fundamental and stable. We all know that a child's easily observable interests are comparatively ephemeral and we have seen the way in which, for example, almost all children pass through a phase in their lives when they have a mania for collecting things. Is it possible to get below these transitory interests to find something more real and fundamental? What can the teacher do?

One Record Card asks teachers to assess a child's interests on a five-point scale under the headings: Intellectual, Practical, Aesthetic, Social, Physical. This is a fairly comprehensive list, and a careful study of a child should enable us to say whether a child's main interests fall into one or several of these categories. We have already seen that there are doubts about the propriety of assessing temperamental traits and interests on the five-point scale. Teachers find another difficulty here.

How well do they know each of the forty or fifty children in their charge? It is not only the number that makes this difficult but the fact that teachers only see the children during their school hours. Surely many of the free interests of the child can best be studied out of school time. We all know how much better we 'get to know' children during a school journey or a school camp. This is not an easy section for teachers to complete on any Record Card. What other possibilities are there?

Dr. C. M. Fleming has produced, but not published, a series of P.A. (Personality Assessment) Reading Tests, which place a group of children in a situation and then state the reactions of individual children to it. The reader is then asked which of the opinions expressed he agrees with. From his agreements their comparative interests in Ideas, People and Things are assessed. It will be noticed that the three basic interests considered here are more limited in their scope than those listed above, but possibly more valuable in their application to selection. Cases of marked musical and art interests can usually be picked up fairly easily by the teacher and added to any interests found from these tests.

Another approach has been made by Lambert[1] through 'General Information' tests. The idea behind these is that children have a greater knowledge of those matters that interest them most. The child is asked to answer items which show his interest in various fields, and the results are said to indicate his interests in 'practical' and 'academic' matter. From this assistance can be given to aid the selection of children for Grammar or Technical Secondary education.

Such tests are in their infancy, and it would be unwise to suggest their adoption without much more information about their efficiency and value. They do, however, suggest possible lines of approach, if it is felt that a more careful assessment of interests was necessary and desirable. We should do well to be sure that the interests assessed in this way were sufficiently stable to warrant building upon them.

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[1] C. M. Lambert: 'A Survey of Ability and Interests at the Stage of Transfer.' *B.J.E.P.* XIX, 1949. pp. 67-79.

To a certain extent abilities and interests are linked, for we would expect children to be specially interested in things they are best able to do. It is necessary, however, to consider abilities separately, since if a child's abilities can be mapped, this will clearly give an important guide to selectors, and later to those engaged in vocational guidance.

This is not the place to go fully into the controversy that is still raging among psychologists about the pattern of human abilities, yet some of the implications of it are so important that they must be considered. The simple picture of the pattern of abilities that appears to be most acceptable to British Psychologists is that given by P. E. Vernon in *The Structure of Human Abilities*, Methuen, 1950. This diagram shows the main structure.

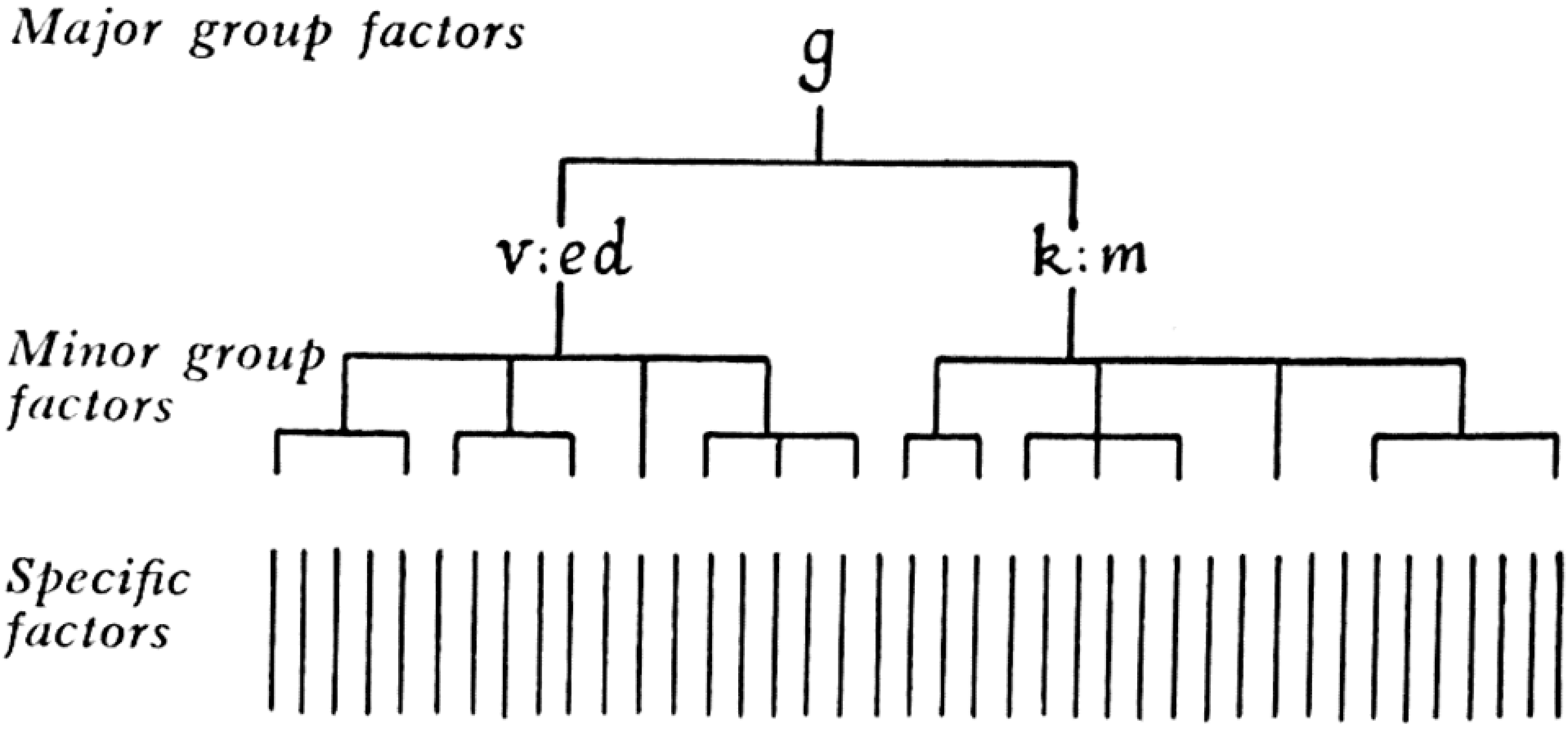

FIG. 1

Diagram illustrating Hierarchical Structure of Human Abilities.

It will be seen that there is a main general mental ability or general intelligence or 'g' that pervades all human activity. An assessment of this, such as group intelligence tests give, is an indication of an individual's likely level of success in anything he undertakes. Then come two abilities that each cover a wide range of activities. One of them embraces what Vernon calls v : ed, because he considers it applies especially to activities that need skill in the use of words and ideas and are affected by scholastic attainment. The other, k : m, can be looked upon as practical ability in its widest sense. For convenience this division may be considered to be into academic (v:ed) and practical (k:m). There is no suggestion that in any child these two wide abilities are mutually exclusive; thus a child may be equally able in both spheres. On the other hand, his level of ability on one side may be naturally higher than on the other, and if so, this may be a valuable guide to the selector.

A further sub-division of these two main divisions brings us for v:ed to more specialized abilities such as V. (ability to handle verbal material both written and spoken), n. (ability to handle number), and so on. The sub-division of k:m gives us k (ability to handle spatial relations), F. (ability to handle performance tests) and so on. The significance of these will be discussed later. Further sub-divisions of these again may give still more specialized abilities which certainly need not concern us here.

All our tests will need 'g' in their solution, but those that give the purest measure of this, that is, the intelligence test, will be the most reliable to us. But intelligence tests used for selection are usually verbal tests, and even the non-verbal tests seem to call up words into the child's mind as he attempts their solution. In addition, English and arithmetic tests need v:ed as well as 'g'. Thus the main 'g' ability and the v:ed sub-group are well catered for. What about the k:m side? This is more difficult.

It may help to consider why the symbols k, F and m are used. In 1928 Cox[1] devised a number of tests in which he used diagrams and models made of pulleys, levers and the like. He found the results of these tests were in accord with estimates of success in woodwork and technical training, and that the tests seemed to have a common factor in addition to 'g'. He called this 'mechanical aptitude' and used for it the symbol 'm'. Meanwhile a number of tests were being tried out that asked children to consider the shape of things. Some of the early tests asked children to fit irregular shaped pieces of wood into appropriate holes in a board, somewhat on the principle of a jig-saw puzzle. Then again, coloured cubes were given to the child and he was asked to build up patterns. In another test a box with coloured irregular shaped blocks were presented, and the child was asked to rearrange these by sliding them round among each other. Since these tests all called for the manipulation of pieces they were called 'Performance tests'. In 1935 Alexander[1] used three of these tests and found they were all linked by a factor in addition to 'g' which he called 'F' and considered to be of importance for selection for technical education and in vocational guidance. Performance tests were naturally given to one child at a time, and, therefore, were most time consuming.

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[1] J. W. Cox. *Mechanical Skill, its Organization and Development.* 1934. C.U.P.

The handling of shapes was being dealt with as a paper and pencil giving test too. If the holes in the board mentioned above were replaced by shaded parts of a rectangle, and the blocks which might fit the holes were replaced by a number of shapes drawn below this rectangle, the child could be asked to judge by eye which shape would fit the shaded portion of the rectangle instead of being asked actually to handle a block and try to fit it into a hole. Again a child could be asked to match shapes. This could be made more difficult by drawing the response shapes as though they had been twisted round or turned over, or both. Similarly, children could be asked to draw from memory shapes they had been shown for a short time, and their efforts scored on the success they showed in recollecting the relationship of the parts of the shape to each other. A number of tests such as these were examined independently by el Koussy[2] and McFarlane Smith[3] during 1934 and 1935, and both found a common factor running through such tests in addition to 'g' which el Koussy called the spatial factor or 'k', and which again seemed to be linked with success in practical matters and technical education.

Thus we have three factors, m, F and k, each associated with a different type of test and yet all seeming to be useful in forecasting success in practical work and technical education. For some years there has been much investigation and discussion about the relationship of these three factors and the age at which each type of test could be used successfully with children. Such investigations as those of Price, Leff, Dempster and others, suggest that, although these three types of test may measure each a slightly different aspect of the matter, they have much in common with each other and can be used as alternatives to each other for the forecasting of success in the technical sphere. That is why Vernon groups them under k : m, which he calls practical-mechanical-spatial-physical, to distinguish it from his v : ed factor, that he calls verbal-numerical-educational. In this direction lies the possibility of selection between the grammar or academic type of child (v : ed) and the technical or practical child (k : m). A technique that would achieve this would be of great value in selection, and that is why the whole matter is being dealt with in some detail here.

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[1] W. P. Alexander. 'Intelligence, Concrete and Abstract.' 1935. *B.J.P., Monograph Supplement*, XIX.

[2] A. H. el Koussy. 'The Visual Perception of Space.' 1935. *B.J.P., Monograph Supplement*, XX.

[3] I. M. Smith. 'Measuring Spatial Ability in School Pupils.' 1948. *Occupational Psychology*, XXII, pp. 150-9.

The most obvious use of these tests would be to divide children into grammar and technical groups. For this to be a simple clear-cut process we have envisaged simple clear-cut grammar and technical 'types', but things are not as easy as this. Although some children show a very clear bias towards one side or the other, they are exceptional. Most children are more or less all-rounders. Moreover, selection could not be based on 'bias' alone, general level of attainment and ability must also come into the picture.

To try out the possibilities of tests to divide children into potential Grammar and Secondary Technical School candidates respectively, an investigation was carried out in Burton upon Trent in 1945-46. After tests on the v : ed and the k : m sides of Vernon division had been taken by 223 boys of 11 plus the results of these two groups were compared. Of 70 boys with a sufficiently high general intelligence for them to be considered for either grammar or technical secondary education, 26 were so well balanced that no selection between the two could be made, while 22 could be selected for grammar, and the same number for technical education. From this it would appear that almost two-thirds of the boys could be selected satisfactorily. However, the investigation was carried on for two years, the same group of boys being tested at six-monthly intervals. The proportion of boys dropped slightly with each testing, but the most striking fact that emerged was that of all the 70 boys only 8 would have been selected consistently at each of the four testings. The lack of reliability in selection by this means is at once apparent. If a technique of this sort is to be used with any degree of confidence it must be sufficiently trustworthy to ensure a consistent result. There would thus appear to be two serious objections to using tests of this sort for selection for Grammar or Technical Secondary Schools; first the proportion of boys showing marked bias is comparatively small, and second the selection is not sufficiently consistent to recommend itself to selectors.

Consistency of selection does not seem to have been explored further, but there is more evidence about the proportion of children showing bias. These investigations were carried out under normal selection conditions, and therefore it is not surprising to find that even smaller proportions of children are found by these less exact methods to show marked bias. In one case when the results from Moray House Intelligence and Moray House Space tests worked by 559 boys were examined, it was found that of the upper 30% no marked bias was shown in 80% of the cases. In other similar investigations 79% and 71% of the children showed no marked bias. This appears to be a fairly general picture and suggests that, even if we ignore the evidence for the lack of consistency in the results of such selection, the fact that so few children can be selected by this means makes it practically useless. In other words the use of these tests to divide children into Grammar or Secondary Technical School groups is of little and possibly also of doubtful value.

There is no doubt, however, that tests within the k:m group can be used to assess relative ability among children to succeed at practical work in a technical education. When only this question is being considered and there is not the complication of selecting grammar education at the same time, these tests have their uses. Thus in a selection procedure for Secondary Technical Schools among boys of 13 plus (or earlier when this is done), spatial tests, such as those devised by Moray House or the National Foundation of Educational Research, can be very valuable. Boys are mentioned here because there is a very real difference between the reaction of boys and girls to these tests, and the value of spatial tests in the selection of girls for technical education has still to be shown.

Another use of such tests is to broaden the basis of a group of children from which selection for grammar and secondary technical education will later be made by other means. If such selection is to be made, children with a bias towards the technical side should have a similar chance to gain a place in the group as those with a more academic bias, and the inclusion of a spatial test among the tests used can ensure this.

So that these tests have their uses. It seems clear, however, that they cannot help us to divide children into grammar and technical groups, and that possibly also their use should be confined to boys only. Whether we use the time-consuming individual performance tests, such as the Alexander Passalong Scale, or group tests, such as the spatial tests devised by Moray House or the National Foundation of Educational Research, does not seem to matter, since for all practical purposes they both give similar results.

There has been some exploration into the field of aesthetic abilities. Of these musical ability has received most attention, and a number of tests have been devised. Wing[1] has studied many of these and claims that musicality which is independent of skill organized by training can be measured in children up to the age of fifteen. Wing has selected seven tests with which he claims that musical age can be measured. Less is known about the possibility of testing for the visual and literary arts. The work of Eysenck[2] on visual imagery, and Williams, Winter and Woods[3] on literary discrimination can be mentioned here although this is exploratory. This is all rather off the beaten track for selection as it is practised to-day, but is mentioned to complete the current picture of special abilities.

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[1] H. D. Wing. 'A Factorial Study of Musical Tests.' 1941. *B.J.P.*, XXXI, pp. 341-55.

[2] H. J. Eysenck. 'A General Factor in Aesthetic Judgment.' 1940. *B.J.P.*, XXXI, pp. 94-102.

[3] E. D. Williams, L. Winter, and L. M. Woods. 'Tests of Literary Appreciation.' 1938. *B.J.E.P.*, VIII, pp. 268-84.

Turning to more detailed aptitudes such as those which might in theory be thought to be related to groups of school subjects, such as languages, science or humanities, although there is some evidence that there are such aptitudes, there is very little to suggest that simple tests will one day be available by which a detailed course could be planned for a child. The idea that the future might hold such a possibility is enough to send a shiver down the spine of many a right-thinking teacher, but he can afford to rest easily in his study, for the chances appear to be remote. Some indication of the position can be gleaned from spheres other than that of selection. Although during the War a great effort was made to find tests for tasks in the Forces appearing to need specialized abilities, the results obtained,[1] particularly with the simpler tests, were mostly disappointing. Similarly in using tests for vocational guidance with adolescents, we cannot hope to advance very far merely by trying to predict aptitudes for general types of work from scores from a battery of tests.[2] This does not mean to say that no progress along this line is possible. For example, ability for clerical work does seem to yield to simple testing and the National Institute of Industrial Psychology has had a test in use for a long time for this. It does, however, appear to be more useful in selecting those who should not attempt this work, rather than pick out those who are fairly certain to succeed. Its value for planning school work is of course negligible.

In following up this problem of special aptitudes we have wandered a little from the path of selection into the highway of educational and vocational guidance, and although these are necessarily inter-related the field is too vast to be covered within the compass of this book.

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[1] P. E. Vernon and J. B. Parry. *Personnel Selection in the British Forces.* 1949. U.L.P. Chapter XV.

[2] P. E. Vernon. *The Structure of Human Abilities.* 1950. Methuen. Chapter XI.

CHAPTER VII

THE PARENTS' PART

IT is laid down in the 1944 Education Act that children shall be educated according to the wishes of their parents, and it follows that, at the entry of the child to the secondary stage of education, the parents' wishes must be consulted. To do this adequately the parent must be shown the pattern of secondary education in the area in which his child is being educated. He must be told the courses available in Grammar, Secondary Technical and other schools, their necessary duration if the child is to get full advantage from them, and what they lead to. Then he must be asked to choose. While it is true that even then some parents give their choice on the whim of the moment, or for reasons which are not educational, the large majority are sincerely seeking the best for their children as they know them. Even if, as far too many parents do, they adopt the child's decision as their own, they do so in most cases in good faith.

Taking the parents' decision at its best (after trying to make it so) upon what can it be based? First there is the knowledge of the child. This is limited by such things as a lack of opportunity to compare him fully with other children of the same age, but at least the parent has had more chances than the teacher of studying the child's interests and unguided activities. To this can be added the atmosphere in which the child has been brought up. This has within it the family tradition, the climate in which the child is living and thinking of his present and future, and the influence that family circumstances may have upon his future career. All this can be reflected in the choice of the parent between, for example, a Grammar School or a Secondary Technical School course. We have already seen that such a decision cannot be settled by tests; in fact the evidence shows that the majority of children appear to have no particular bias of ability on the one side or the other. It would appear that the decision rests upon factors other than ability, and the interests, hobbies and aims of the child as known by the parents may be our safest guide in making this vital decision. Of course all parents are not so well-balanced in their observations of their children and their judgements about them that they can give wise and considered decisions. Some safeguard against clearly unwise decisions can be found in the scrutiny of all parents' expressed wishes by the child's Head and Class Master and consultation with the parents if their decision is felt to be unwise, but with this co-operation the parents' wishes merit the most serious consideration. In fact we are legally bound to heed it in so far as the careful use of public money will allow.

Looking at the problem from another angle, the child who is being educated in the Secondary School in accordance with the considered wishes of the parents is more likely to succeed, for the teacher can be more certain then of that all important home backing. One or two special points arise from this. There is the child who, by his ability and attainments, appears to be suitable for a Grammar School course, but whose parent does not wish him to take advantage of this. Clearly this is one of those cases mentioned above, when the Junior School Head may help by discussing the matter with the father. How far should this discussion become persuasion? We all know to our cost cases of children whose parents have been over-persuaded and then, because their backing has not been kept up, the child has fallen by the wayside. Over-persuasion is dangerous and seldom advisable.

The second and bigger problem is concerned with the early leaver. The size of this problem varies very much with each area, and there are many social and economic factors behind it as well as those that are purely educational. How far it can be met at the selection stage is doubtful, but at any rate something can be done by educating the parents. First by making sure that they realize the minimum duration of the course they are choosing for the child. Here it is necessary to unfold to them some of the complexities of the General Certificate of

Education. Then the advantages of a shorter course that has been completed over a longer one cut off before its fulfilment can be stressed. Finally the suitability of a course for the vocational aims of the parent and the child needs to be made clear. Thus a parent, attracted by the Grammar School, may choose this for a child for whom he intends an apprenticeship, only to find that if the boy remains to complete a General Certificate of Education, he is too old to be apprenticed. Such considerations may help to reduce the wastage of early leavers; at least they should be given a trial.

In addition to expressing his wishes for the child, the parent can also supply important background information about the child. He should be given the opportunity of making known any special facts that may have some bearing on a selection decision. Much of this information will already be available on the child's Record Card, but there is a chance that it will not, and in any case the parent should have the opportunity to bring it forward himself. The unsettlement of a broken home, of numerous changes of school, of early education in another country, of long breaks in normal education for health or other reasons, are all matters that can come from the parent. Physical difficulties, especially such things as slight deafness which even the most alert teacher, and all but the most thorough medical examination, may miss, need to be given the chance to come up from the parent. In practice, most parents have nothing special to report, but, especially in border-line cases, information supplied by the parent can sometimes prove most valuable in reaching a fair decision.

The parents' contribution completes the evidence upon which selection can be based. We have considered the child's abilities and attainments, his temperament and interests, evidence from the teacher and evidence from the parents. The next step is to arrange all this to enable us both to deal rapidly with large numbers of children, and also to study each child in as much detail as is necessary.

CHAPTER VIII

ASSEMBLING THE EVIDENCE: SOME TECHNICAL CONSIDERATIONS

THE problems associated with school marks if they are to be added or compared in a way that is fair to the children have been fully discussed elsewhere.[1] Here we shall confine ourselves to the similar but peculiar problem associated with selection. We shall mainly be concerned with the marks from tests which we shall call raw scores, but we shall also have to take some notice of teachers' assessments expressed on a five-point or some other system of grades. Marks will be discussed first. When statistical techniques came up they will be explained as far as is possible in non-technical language, but references will be given to fuller and more technical accounts of such techniques for any who may wish to follow them up.

Age Allowances

If the children in a Junior School in which there are streams are divided into age groups this sort of pattern usually emerges:

Ages on Entry to Class	*IVA*	*IVB*	*IVC*
10–10·5	16	22	24
10·6–10·11	27	21	12

This is a typical example and shows that, generally speaking, the older children are more advanced than the younger. This may be due to added maturity or to a longer school life; whatever the cause it is a striking phenomenon.

If raw scores are used for selection this higher attainment among the older children means that more older children than younger are selected for Grammar Schools. In a way this is fair since all that is happening is that the children with the higher attainments, irrespective of age, are being selected. There are, however, two objections to this. It hardly seems just that a child's date of birth should affect his chances of a Grammar School place, and, what is educationally more important, there is no evidence that a child's date of birth affects his ultimate educational potentiality even though it may influence his attainment at the age of eleven[1] and for some years after this. It is for this reason that age allowances have been introduced. These aim at giving equal opportunity to children irrespective of when they are born, and they can be considered to be effective if the number admitted to the Grammar School from each age group is roughly the same.

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[1] Vernon, P. E. *The Measurement of Abilities.* 1939. Chapter IV. U.L.P. Thomas, T. *The Science of Marking.* 1930. John Murray, Sumner, W. L. *Statistics in School.* 1946. Chapter VI. Blackwell.

Calculating Age Allowance

Age allowance can be assessed in two ways; by accepting and applying evidence of general tendency from the result of other tests, or by calculating age allowances for every test. Where the former method is used, we have to choose an allowance from among many considered appropriate by different investigation. For example, Thomas suggests 2% for each month of youthfulness, McClelland suggests 1·2%, and many others have their own pet percentages. Instead of percentages it is sometimes recommended that a fixed mark should be added to each score. This is simpler but less just. Thus where 6 is the fixed mark age allowance, 96+6 gives a very different picture from 6+6. Clearly neither percentage or fixed mark additions are very satisfactory, and the fairest thing is to calculate age allowances fresh from every test. This has been done for most standardized tests and the allowances have been incorporated in the conversion tables supplied with the tests.

Here is one way of calculating age allowances.[2] The raw scores for children in each of the quarters[1] of the year covered by the age group can be collected into a frequency distribution, part of which will appear thus:

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[1] See note by Sir Godfrey Thomson, pp. 161-2. McClelland, W. *Selection for Secondary Education.* 1945. U.L.P.

[2] For details see Davies, J. B. T., and Jones, G. A. *The Selection of Children for Secondary School Education.* 1936. Harrap. Sumner, W. L. *Statistics in School,* pp. 86-8. 1948. Blackwell.

TABLE 1

	Youngest						*Oldest*	
	f	cf	f	cf	f	cf	f	cf
Score	*1st*	*Quarter*	*2nd*	*Quarter*	*3rd*	*Quarter*	*4th*	*Quarter*
—	—	341	—	320	—	300	—	289
21	49	390	47	367	46	346	43	332
22	54	444	53	420	51	397	49	381
23	59	503	55	475	52	449	47	428
24	65	568	62	537	59	508	54	482

The frequencies (f) can then be expressed as cumulative frequencies as in the columns headed cf above. These can then be expressed as percentages of the totals for each quarter and graphed as on page 69.

It will be seen at once that neither percentage nor fixed mark allowances is accurate, since the allowances should vary from one part of the mark scale to another. Near the top and bottom there should be little or no allowance and there should be more towards the middle. There are three ways of using this information. First a monthly allowance can be calculated from the spread of the graphs for each level of marks, and these allowances can be worked into the conversion table for the test. An alternative is to take the allowance at about the critical level of selection. If 20% of the children will be selected from Grammar Schools then the spread at the 20% level is examined, monthly percentage allowance calculated from this, and these applied throughout. The argument for this is that age allowances matter most at this critical point and it does not matter very much if above and below this the allowance is slightly false. The third way is similar to the second, but fixed marks are awarded instead of percentages. This is merely carrying the 'critical point' argument a step further and tolerating rather more inaccuracy. It is considered that such inaccuracies will not be sufficient to upset fair selec-

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[1] Quarters are suggested since the numbers in an age group for most L.E.A. areas is too small to give smooth curves from monthly figures.

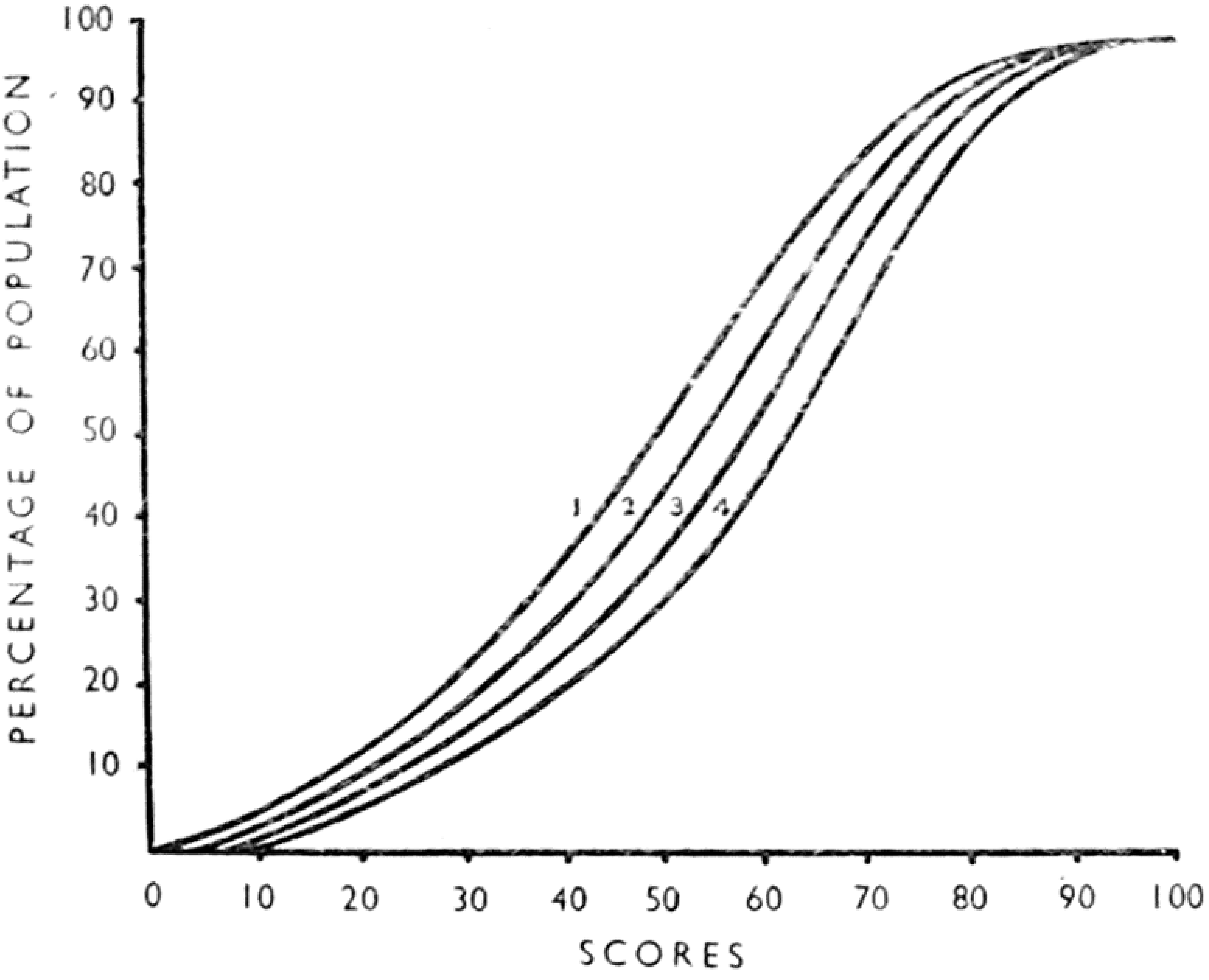

FIG. 2

To find age allowances, cumulative frequency curves are drawn for the scores of the children born in each quarter of the year's age range. Thus the graph labelled 1 is for children born in the last quarter, the youngest children, and so on. To bring the youngest children into line with the oldest, marks, which vary at each point on the scale, must be added. Thus the spread of marks between the youngest and oldest children at a score of 60 is 12, the age difference is 9 months; this means that 1⅓ marks should be added for each month of youth to ensure that 43% of both the youngest and the oldest children have 60 marks or less. By calculating the age allowances at different points on the scale between any selected quarterly graphs, a series of monthly allowances for youth can be found. From these a conversion table can be constructed.

tion. In practice the first method means only a little more in calculation and thought, so that there is not much practical advantage in accepting one of the less accurate alternatives.

Making Marks Comparable

Even though age allowances have been calculated and applied we are still only at the beginning of our trouble. Raw scores from any considerable number of children forming a rough cross-section of an age group, provided the test is suited

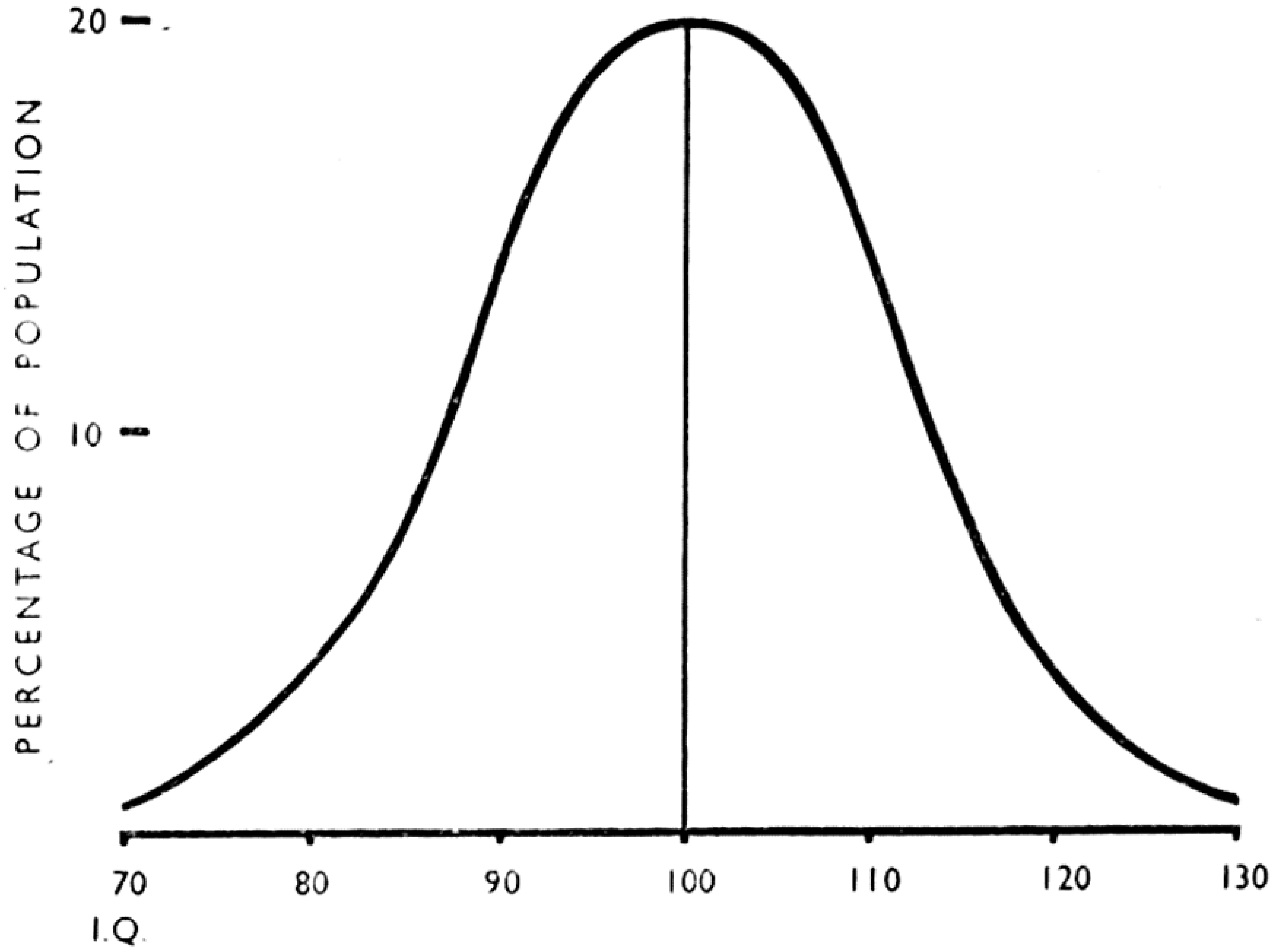

FIG. 3

A normal distribution of scores such as is usually produced by a standardized intelligence test.

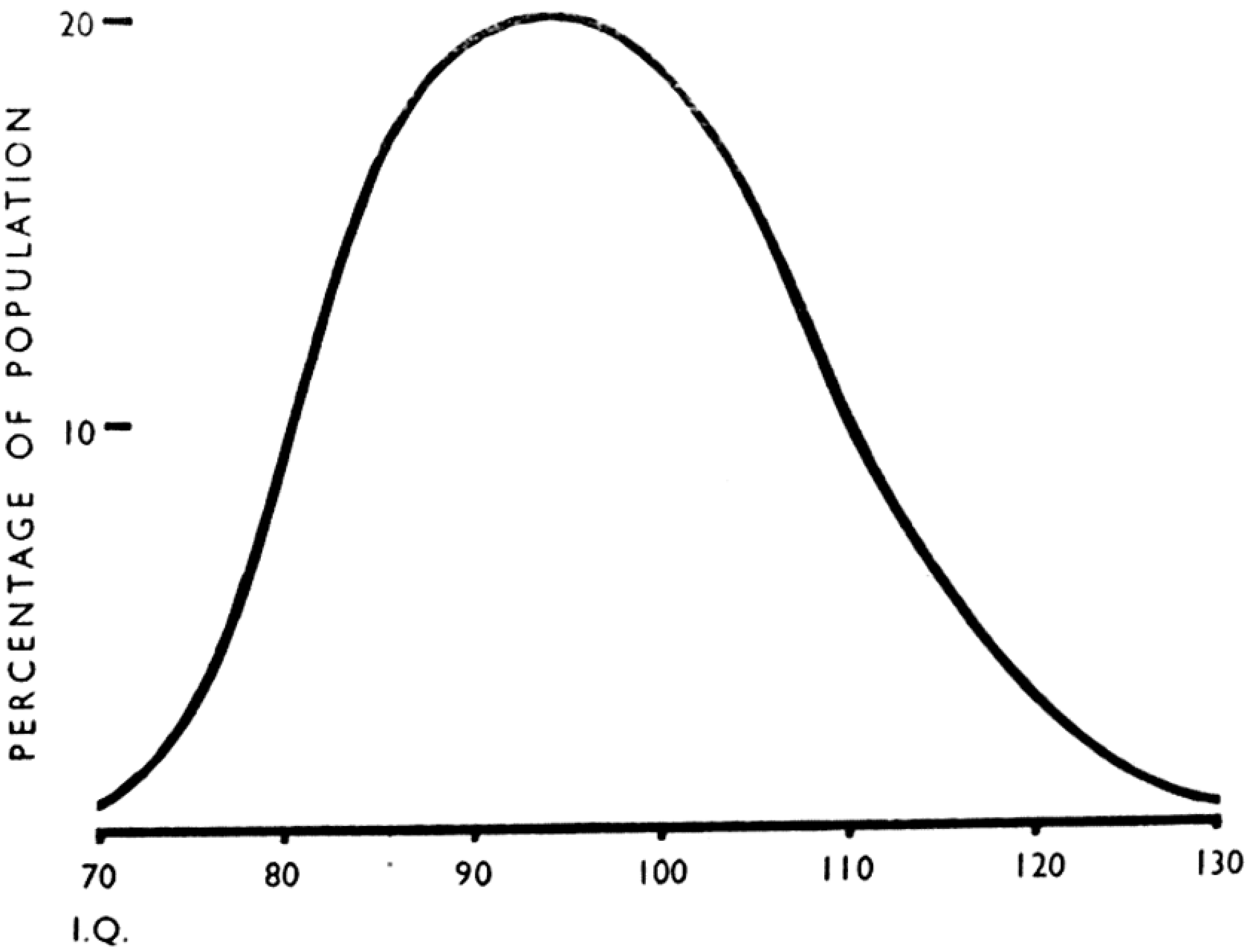

FIG. 4

A positively skewed distribution from a test which spreads out the more able children more than a test which gives a normal distribution. Such a distribution is more useful for selection than a test giving a normal distribution since it does increase the spread at the upper end.

to them, when assembled in a frequency table and then graphed show approximately a normal distribution. There are a number of provisos in this statement, but usually they are all met automatically in selection work except that about ‘a suitable test’. The word suitable can be interpreted in two ways. It would usually imply that the test should suit the population in the sense that the distribution should be balanced—see Fig. 3.

In selection, however, it is important that the children's score should be most spread out in that part of the distribution where selection is being made, that is, among the higher scores. Therefore the curve from selection tests is often of this shape—see Fig. 4.

This variation from the normal curve need not worry us unduly, in fact it is an advantage. The main point is that we must ensure that a position on one curve be expressed in the

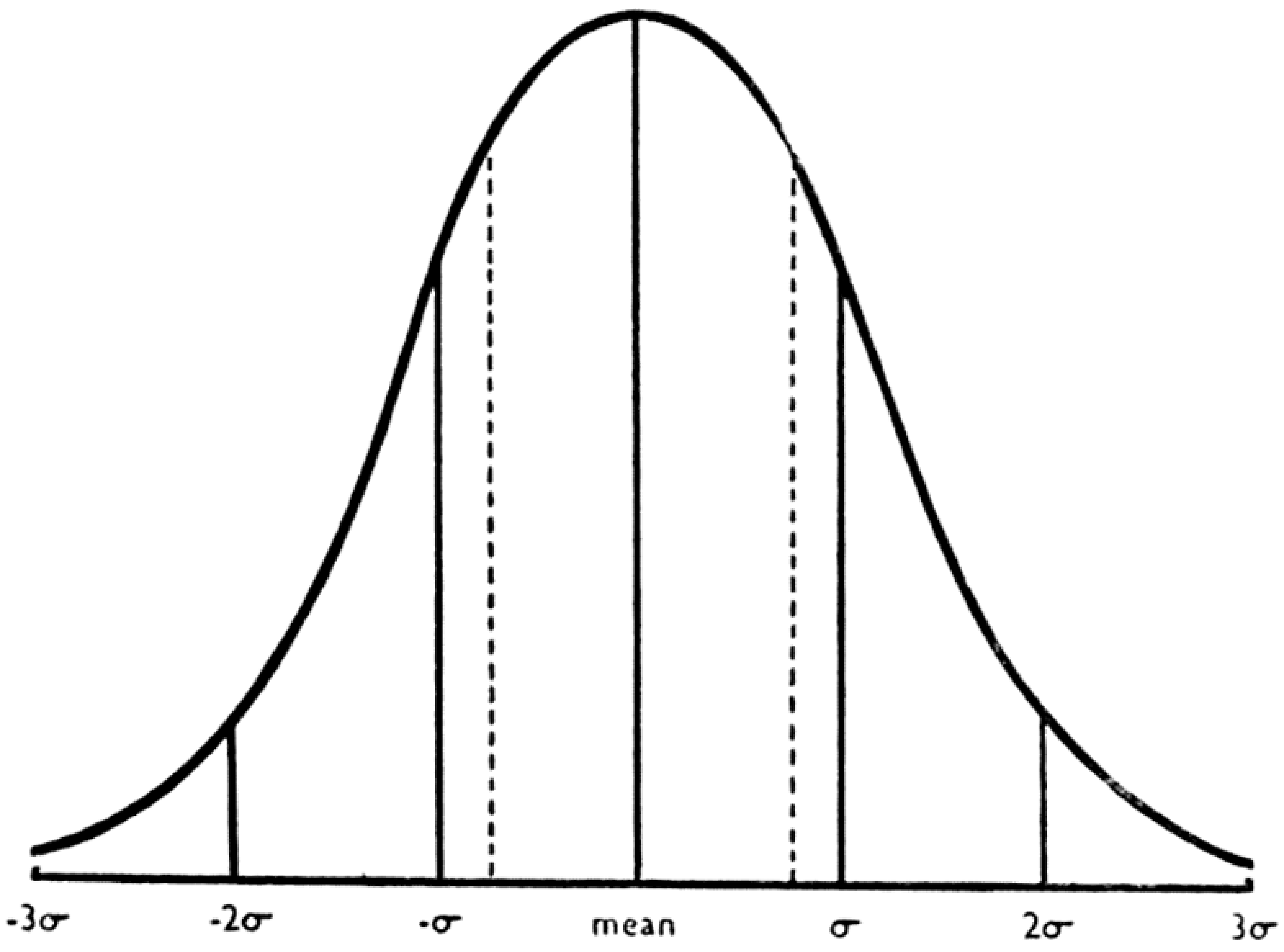

FIG. 5

This is a normal distribution balanced round the mean of 100. The standard deviation (σ) is measured from this. Approximately ⅔ of the scores will fall between $+\sigma$ and $-\sigma$. Almost all fall between $+3\sigma$ and -3σ. Half the scores fall between the dotted lines which are $+{\cdot}6745\ \sigma$ and $-{\cdot}6745$. The mean is the arithmetical average of the scores. If we know the standard deviation of a set of scores we can locate the position of each score above or below this mean.

same terms as a similar position on another. In other words after conversion from raw scores, x marks in arithmetic must mean the same thing as x marks in English.

Means and Standard Deviations

Distributions such as those we are dealing with can be simply expressed by two measurements, means and standard deviations. The mean of any set of marks or raw scores is the arithmetical average. In a normal distribution this is at the peak of the curve. The standard deviation is a measurement of the spread of the distribution around this mean. Diagrammatically it can be shown as on Fig. 5, page 71.

Clearly a far-flung distribution will have a larger standard deviation than a close-packed one. Before we can compare two sets of raw scores, therefore, we must bring their distribution to the same mean and standard distribution.

Standard Scores

When the mean and standard deviation had been calculated[1] for each test, the raw scores for each could then be made comparable by converting them to a common mean and standard deviation. The mean usually used is 100 and the standard deviation 15 above and below this (i.e. 115 and 85). Raw scores arranged in this form are said to be standard scores.[2]

Tables are usually constructed for this conversion from raw to standard scores, and these conversion tables usually incorporate age allowances as well so that both processes are carried out in one operation. The conversion tables printed in the Moray House Test Manuals are a good example of such tables.

[1] The mean is the ordinary arithmetical average. The standard deviation is found by taking the difference of each score from this mean, squaring these, dividing by the number of scores and then taking the square root. All this is more fully explained in any book on educational statistics. Perhaps the easiest to use is Chambers, E. G. *Statistical Calculations for Beginners.* 1940. C.U.P.

[2] This is only one form of standard score. Further details are found in more books on educational statistics, e.g. Vernon, P. E. *The Measurement of Abilities,* especially pp. 71-4. 1940. U.L.P. Glassey, W., and Weeks, E. J. *The Educational Development of Children,* pp. 37-42. 1950. McIntosh, D. M., Walker, D. A., and Mackay, D. *The Scaling of Teachers' Marks and Estimates,* especially Chapter V. 1949. Oliver & Boyd.

Constructing a Conversion Table

A simple procedure to follow when producing a table for converting raw scores to standard scores is:

1. Construct a table of raw score frequencies similar to that in Table 1 above (p. 69).
2. Graph the cumulative frequencies and calculate age allowances, using one of the methods already described.
3. Construct a new frequency table introducing the age allowances and sum across.
4. From these sums calculate means and standard deviations for the distribution.
5. By comparing the means and standard deviations with 100 and 15 respectively, obtain the equivalent of raw scores age allowances from two above in terms of standard scores.
6. Construct a table with raw scores down the side and ages along the top, insert 100, 115, 130, 145, 85, 70, 55 in appropriate positions for each age and complete the table by inserting other standard scores proportionately throughout the table.

This table could then be used for the population from whom the raw scores had been obtained. If this were both large and representative, the same table might apply to other groups of children, but this cannot be taken for granted. In constructing a conversion table for one of the recently published Moray House Tests, over 40,000 results were used. The groups of children making up this population were drawn from sixteen areas, ranging from 549 in the smallest area to 9,305 in the largest. After conversion the means of the groups of standard scores ranged from 107·38 to 93·30 and the standard deviation of their raw scores (not standard scores) from 29·42 to 19·48. Clearly if a conversion table had been based on any one of these, it would not have been appropriate to the others. The conversion table based on all the results was considered to be sufficiently representative to be used by any area in the country, that is, it could be looked upon as providing national norms. No distribution table for a single area can do this, but, since all selection is based upon comparison between the children in an area, this does not prevent us using our own tables for our own areas. Strictly speaking, if we use some tests such as those of

Moray House with their more widely based tables and others for which tables have been constructed on the local group, some adjustment should be made to render these exactly comparable. This would mean either completely reconstructing the Moray House tables on the local results or making an adjustment on local means and standard deviations, either of which would be time-taking. In fact, a great deal depends upon how the result of all the tests are to be used. Before looking at this something must be said about sex differences in intelligence and attainment tests as a whole.

Sex Differences

There does appear to be a significant difference between the results obtained by boys and girls in verbal intelligence and attainment tests. Generally speaking girls do better than boys. Thus in a recently issued Moray House Intelligence Test the mean raw score for the girls was 44·55 and for the boys 42·45, a difference of 2·10 points, equivalent to about one point of standard score. The same sort of picture is given by other intelligence tests and for attainment tests. There appears to have been some fluctuation in this in recent years and it has been attributed by some to war conditions, but it could also be due, in part at any rate, to unequal development between the sexes at 11 plus. To us, the reason is less important than the effect upon selection. If boys' and girls' results are considered together it means that on a given level of selection for Grammar Schools more girls will gain places than boys. In one case recently examined, it was found that if the sexes were treated equally, of those selected for Grammar School education 57·8% were girls and 42·2% boys. This is unsatisfactory from many points of view, and it does seem to suggest that throughout the selection procedure the two sexes should be treated separately. There is some doubt whether this sex difference persists throughout school life, but if it does it certainly becomes less marked and may even be reversed, and at any rate it appears to vary from one subject to another in the upper part of Grammar Schools. There is thus some justification for keeping the proportion of opportunity between the sexes equal at 11 plus by allowing an equal number of places for each sex.

Presentation of the Results

The results of group intelligence tests and attainment tests present other difficulties of comparison. In addition to raw scores there are at least three forms in which these may be presented to us. The earliest conception of intelligence was one of mental age. From this was developed the idea of the Intelligence Quotient. The third we have already dealt with, the standard score. The conception of mental age is a simple one. A child's mental age is the chronological age of children who are usually found to have the score he has obtained. Thus a child whose chronological age is 11·6 and who obtains a score usually made by children of 11 as said to have a mental age of 11.

A mental age can be converted to Intelligence Quotient by dividing it by the child's chronological age and multiplying by 100:

$$\frac{\text{MA}}{\text{CA}} \times 100 = \text{I.Q.}$$

It is a simple but time-taking business to make many of these conversions, but tables can be constructed or obtained to speed things up.[1] Intelligence Quotients from all tests naturally have a mean of 100, but their standard deviation can vary considerably and therefore they are not directly comparable. Thus in a recent investigation in Southampton it was found that the standard deviation of twelve group intelligence tests varied from 12 to 35, but half of them fell within three points of 16. It is often found that the standard deviation of intelligence tests is around this figure, and this is one of the reasons why 15 has been selected for the standard deviation of Moray House Tests and others. This is the basis of the third way of showing results, the standard score referred to above. Standard scores are therefore the safest basis of comparison. There is still the trouble that the population upon which these have been based may not be strictly comparable. In the case of the Moray House Test mentioned above, the 40,000 population, carefully selected to include representative areas, is well and truly based, but many other published tests and their conversion tables are much less well founded. Thus their means may vary as well as their standard deviations. For example, in the Southampton investigation mentioned above, the means of the group intelligence test for the boys varied from 100 to 152 for twelve tests although eight of them fell between 108 and 117. The picture for the girls was similar to this. The same thing can happen with attainment tests.

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[1] *The Tweeddale I.Q. Conversion Tables* by B. B. Mager. 1950. Oliver & Boyd.

Because of all these potential difficulties great care is needed in comparing and combining test results. If one series of balanced tests are used, such as the Moray House Tests, these difficulties are avoided and some may think that this is an excellent reason for restricting the choice of tests to some such balanced group. This, however, is a restriction that some will not wish to observe. Thus objections to the Moray House Arithmetic Test have been raised on pages 20-24, and some may feel that these are sufficiently valid to seek tests that better express the children's arithmetical attainments. Again, if a composition test is to be introduced and scored as suggested on page 29, these difficulties will arise. Attention must be drawn once more to the fluctuations of individual children's scores when intelligence and attainment tests are repeated or parallel tests are used even though the results of the tests are shown by their high correlation with each other to be closely in accord. Because of these variations and to enable any well constructed test to be used, some selectors prefer to convert all test results into grades.

The Use of Grades

These grades are really broader scores but are often, although not necessarily, expressed by letters instead of figures. There are two sort of grades. The simplest is where say 140-131 is called A, 130-121 B, 120-111 C and so on. The more useful in some ways is one in which the grade corresponds to a percentage of the scores obtained by the group. This can be either a fixed percentage throughout, say 10% of the population in each grade or a varying percentage such as 5% A, 25% B, 40% C, 25% D, 5% E. The percentage grading, being based on the actual population under consideration, is the more satisfactory. The varying percentage is useful if teachers' estimates of attainments or personal qualities on similar grades are being considered.

It is a simple matter to examine the frequencies of all results however they are expressed and turn these to grades based on percentages.[1] The objection to using fixed percentages is that the scores at the upper and lower end of the scale are much more spread out in most distributions than those towards the middle. Thus the scores in the top 10% will be much more spread out than those between 50% and 60%. That is why a varying percentage is often used. In this way the difference of the spread of scores of varying levels can be allowed for. The calculation of the grades is just as simple.

Combining the Results

Whether we decide to use balanced tests or grades must depend upon how we intend to combine our information. Most selectors wish to add their test results to give a grand total of scores. They therefore prefer balanced tests or they carefully balance the tests they use. There are a growing number of selectors however who prefer to proceed by comparison rather than by addition. There is something to be said for both approaches, and some objections to each also.

Adding v. *Comparing*

Addition can cloak real differences. Thus, taking results from the three Moray House Tests: A 115, E 115, I 115, and A 120, E 120, I 105, and A 110, E 110, I 125, or even A 100, E 100,

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[1] If there are a hundred such grades they are, of course, percentiles. See Vernon, P. E. *The Measurement of Abilities*, Chapter III. 1940. V.L.P.

I 135, all add to 345.[1] Surely these mean very different things. How far can a good result from one test be said to make up for a poor result on another? This is a very moot point and opinions differ. Comparisons bring out these discrepancies, but whereas additions can give a tidy order of merit list the procedure by comparison cannot so easily do so. For the most part a comparison between three results such as these shows that the results for most children are fairly even and those falling into the same grade for all three can be grouped together, but the exceptional cases stand out at once since they do not fall into one or other of these groups. These surely are the children about which more information is needed and this procedure by comparison has the merit of drawing attention to them.

Looking at the problem in more detail and taking one group of results at a time, we find the same picture. If we have a standard score from an English test and a school result, scaled as has been suggested above, and expressed numerically, we can either add or compare them. Again we can accept a poor result in one and a good result in another as balancing out. If however each is graded and compared, discrepancies stand out at once. Similarly the results of a number of different types of group intelligence test cannot be added unless they are first reduced to some standard form, but the same results when graded can easily be compared. If they are even this will at once be apparent. If of, say, four results, three are even and one well out it would appear to be fair to discard the 'wild' result and settle for the three that agree. If all the results are discordant then further information is needed about the child's intelligence. In practice most results, when graded in this way, provided the grades are reasonably broad, are sufficiently even to place the child in a group. Where they are not it is usually found that the child presents some special problem. Again the difficulty has not been cloaked by addition but has been exposed for the further investigation it merits.

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[1] Some selectors weight different types of information. After examining this problem very fully, McClelland (*Selection for Secondary Education,* p. 83. 1945. U.L.P.) reports that he cannot lay down any principles, that the gain in efficiency is very small anyhow, and the time taken better spent on collecting and using further information more satisfactorily.

To sum up: Addition is simple to use but it hides important discrepancies; comparison is a little more complicated but it gives a clearer picture of each child's results. Looking at it from another point of view: addition must be based either upon well balanced tests, which itself restricts the selector, or the time-taking process of balancing up test results is necessary; comparison makes it possible to use grades which need much less calculation than the balancing up of tests.

Comparing Group and Individual Intelligence Test Results

The need for further investigation into the intelligence of some children whose group intelligence results vary considerably may lead selectors to test these children individually. Individual tests take a considerable time and need to be administered by trained personnel. Where these difficulties are overcome and individual tests are included only a small number of 'problem' cases are tested, and it is therefore impossible to turn the results to standard scores for the group as a whole or convert them to grades. The relationship between individual and group test results at the age of 11 plus is therefore important. Usually the individual test used will be the Stanford revision of the Benet-Simon intelligence scale by Terman and Merrill.[1] The authors recommend that the scale as a whole should be considered to have a standard deviation of 16, but their more detailed results show that at 11 and 12 there is a marked increase of standard deviation. For 11 this is 18·0 for the L form and 17·3 for the M form, and for 12, 20·0 and 19·5 respectively. The mean also fluctuates somewhat from age to age, at 11 it is 101·9 and 102·2, at 12 101·2 and 101·6 Taking figures for 11 years it would therefore appear reasonable to adjust L and M form results to standard scores with mean of 100 and standard deviation of 15 by using this table, interpolating the intermediate figures as required:

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[1] Terman, L. M., and Merrill, M. A. *Measuring Intelligence.* 1947. Harrap.

TABLE 2

L	M	Standard Score
120	119	115
138	136	130
156	154	145
102	102	100

In practice this explains some of the wide discrepancies found when the results of individual tests are compared with those from group tests in this way.

But there is another source of misunderstanding that appears to arise. After making these allowances for the difference of mean and standard deviations in cases where children have erratic group test results, we often find that the individual test results are well above those from the group tests. This appears to be due to a difference in the emotional response to the two types of test. A child who is inclined to be emotionally unstable or upset does not settle down easily to a group test, whereas the sympathetic contact with an experienced tester reassures the child and they obtain better results than they have on the group tests. It is surprising in practice how many children, picked for individual tests because of their erratic group test results, are found to be already attending the child guidance clinic. It would appear therefore that it is well worth while to investigate all such cases, especially those that fall near the border-line, by using an individual test. Not only does this give another measurement of intelligence, but it enables a report upon the child and his reaction to be obtained from the skilled tester. Such evidence can be very valuable in border-line cases.

We will suppose that by now the children's records from all sources have been suitably adjusted and converted to make them comparable and then assembled for final decision to be reached. The result may have been added or combined in some way or another to give a picture of the whole group which may be in the form of an order of merit list on a series of graded groups.

Before considering the making of decisions a useful check to this array of results might be mentioned. This has been used for a number of years in Southampton and found most valuable. Each school is asked to prepare an Order of Merit List for all its children. It can base this on daily school work or examination work as it thinks fit. Graded groups containing the number of children who will eventually be accepted for Grammar Schools, or the appropriate number from the Order of Merit list, are then taken and the position on the result sheet, or the letter of the group into which they fall is inserted for each one against his place in the school Order of Merit list.

School Order of Merit	*Classification*		
	Order of Merit	*or*	*Group*
1	7		A
2	15		A
3	29		B
4	22		C
5			
6	35		C
7	47		C
8			
9			
10			
11			
12	30		B
13			
14			

Anomalies become at once apparent. Why is No. 5 apparently out and No. 12 in? In carrying out this procedure it has been found that the number of anomalies that call for special investigation is very small and this simple procedure shows them up clearly for special study.

We have now, with appropriate safeguards, arranged our information ready for reaching decisions. We have already seen that it is profitable to check this arrangement and that if we do so anomalies are seen which suggest that we should be unwise to base our final decisions upon a simple scrutiny of this array of results. In the next chapter various ways and means of reaching a decision about children whose position is in doubt will be discussed at some length.

CHAPTER IX

DECISION FROM THE EVIDENCE

WHATEVER methods and texts are used it is a comparatively simple matter to decide those who are certainly worthy of a place in a Grammar School and those who are not. Between stand a number of children about whom there is some doubt. If the selection is not only for Grammar and Secondary Modern Schools but also for Technical Schools the picture is rather more complicated, but again some decisions are comparatively easy, and many of the children can be classified into one or other of the main groups. Again there are those about whom a decision is difficult.

Usually the border zone is taken to lie around the minimum level of acceptance, but in fact there are two sorts of doubtful case. The first and most obvious one is the case of the child whose total score or general position is close to the border-line of acceptance. The doubt here is due to the fact that usually the border-line comes at a place where children are so closely grouped that there appears to be little to choose between them, but it must also be remembered that there is a second and very important element of doubt in the fact that the children who form this group could easily, because of rather different conditions, or rather different tests, have been placed somewhat higher or lower than they actually have been. This element of variability means that the border zone should be comparatively wide; the close grouping of the children suggests that a more detailed study should be made of each child in this group.

There is, however, a second type of doubtful case, that in which there appears to be some marked disagreement between the evidence that has been collected. This may occur well above or well below the border zone as well as within it. To ensure that such cases are found the method of selection should be such that they are made to stand out clearly. This happens if the selection procedure allows for comparison between evidence from various sources such as school records and test results.

When the children about which there is some doubt have been selected, and this will vary with the methods used for assembling the evidence, the next step must be to examine the evidence for each child more fully, calling in additional evidence if this seems to be desirable. The ways in which this can be and is done are very diverse, and only the more important and suggestive lines of approach can be studied here. Broadly speaking they fall into two groups, those that depend upon evidence gained from and about the child and those that, in addition, bring in, by an interview technique of one form or another, the child himself.

To take the simplest case where children have worked only three objective tests, English, arithmetic and intelligence, the scores of children to be examined in the border zone can be examined more critically to study the evenness of the results and consider whether say a child with a high I.Q. and lower attainment score should be given preference over a child of more even development. Knowing something of the variability of such results such decisions are bound to be made on rather insecure foundations, and it is seldom that such a simple solution is found acceptable. If the evidence has been more widely collected it may be possible to proceed by comparing the results of more than one result in each of the three main sections, or by comparison between test results and school assessments on records. Such comparisons may be made mechanically by adding or grading such evidence giving weights if these are felt to be justified.

More often other evidence that has been collected may be introduced here in addition to this survey. Thus the compositions of border zone candidates may be examined, school reports may be consulted, special tests may be worked or the child's Primary School teacher may be consulted. Such additional evidence may help to give a fuller picture of the child. This study may be carried out by a group of people from Primary or Secondary Schools or from administrators and members of Managers, Governors and Education Committees. There will be no close agreement as to who should serve on this panel, but often the net is flung rather wider than would appear to be wise.

To take one or two methods actually in use. After a consideration of the results of the whole age group a border zone group is decided upon and studied more fully. On the basis of this a preliminary list is drawn up and the names of children on the list in each Primary School are submitted to the Heads of each Primary School for their comments. These comments are then considered by a panel of selectors and adjustments are made and the list sent out to the Primary Schools again. Any children whose inclusion or exclusion is then challenged are then re-tested and a final decision is reached.

In another case, when the border zone children have been ascertained, detailed reports on each are called for from the Primary Schools, who are also asked to send the children's exercise books and to make special comments about their methods of work and special interest.

In a third the examination is taken in three stages. Part I is a straightforward three-test examination, and children with less than an agreed minimum total on the three tests are excluded from Part II. This level is fixed so that approximately twice as many children sit for Part II as there are likely to be places for a Grammar School. Similar tests to those in Part I are taken in Part II so that the results may be used to check each other, but composition and more complex problem arithmetic tests are also added. On the basis of these results the group is divided into three sections, the sure acceptances, those who will not be considered further, and a border zone group. The border zone group then take three more tests similar to those in the previous parts, again as a check, and tests calling for various forms of written expression and the handling of arithmetical problems in everyday life. The final decision on the children in the border zone group is based on the results of all three parts of the procedure.

There are clearly many ways in which by concentrating more and more upon fewer and fewer children this final decision can be reached without seeing the children at all. Each has its own advantages and difficulties, and the method preferred is largely a matter of taste and experience. Those who use them have all made one important decision; that they prefer not to interview the child. Their reason for this is sometimes one of expediency, the time needed for such interviews, but more often it is based on a feeling that interviews are unsatisfactory and unfair. There may be an unfortunate history behind interviews that have been tried in the past or fear of the sort of criticism that can arise when interviews are used. Sometimes the argument is based on the advantage of using only objective results, but more often it is felt that the subjective reports and criticisms of those who know the children well, their Primary School teacher, are better than the opinions of any group of adults, however skilled and experienced, who only see a child for a brief time under unusual and trying conditions. The Consultative Committee set up by the National Union of Teachers in their report on selection are most emphatic about this and recommend[1] 'that apart from examination by Medical Officers or interviews by qualified psychologists, oral examinations or interviews conducted by persons other than the child's teachers should form no part of the allocation procedure.' Their objections to the formal interview as it is sometimes still carried out can be easily understood, but selectors have long been aware of the limitations and dangers of interviewing, and therefore some most interesting methods of avoiding these are now in use.

The most dangerous technique is that by which children are interviewed by a group of adults who have no access to any information about them, but are asked to give an 'independent opinion'. This may take the form of a grade or mark which is then added to or compared with other results to help towards a final decision. The few minutes of strained interview, assessed thus *in vacuo* as it were, can be a very chancy business indeed. To modify this at many interviews those present are provided with the full picture of the child's results and reports. They may discuss this information before the child comes in and may have the child's composition read to them or see his class books or discuss him with his Primary School Head or Class Teacher who may, however, discreetly disappear before the child comes in. There are many ways in which the interviewing panel can itself be prepared so that its members can set the child against his background of history and achievement. This all helps to make the study of the child a more informed one, but the child alone among so many adults on this special occasion may still be awed and not a little unnatural. To help this some panels interview the children in small groups, chatting to them informally and drawing them out with what skill they can command.

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[1] *Transfer from Primary to Secondary Schools*, p. 50. 1949. Evans.

Before passing to other interview techniques it may be well to consider how the results of such interviews are used. The mark or the grade which is added to or combined with other results is the simplest form of record, but there are others. No formal score may be made, but each child's results may be discussed again with the child himself in mind and a decision reached on his particular case. This informal method is usually only possible where a small number of children are all seen by the same committee. Another method where candidates are grouped is to allow the panel to move a child up or down from one group to another by comparing him with other children in his original group. Again each method has its difficulties and much depends upon the way it is handled.

Those who feel that the child should be seen, but fight shy of the most chatty direct interview, have used their ingenuity to try to find indirect methods. In one case, the argument runs, it is the child at work that we really want to study rather than the child at interview, and thus a series of special activities are concocted. These may be undertaken individually or by groups, but in each case an observer is present either to chat with the child while he is busy or just to observe his reactions.

The group method is rather like that used by the selection boards in the forces during the war. Children are placed in unusual circumstances or presented with problems which they as a group are asked to solve. They may be let loose in a sort of junk playground and left to their own devices, or be given simple tools and materials and asked to construct villages or dress dolls. Their own ingenuity and the way they lead or follow in the group are observed. They may be faced with three or four such situations with different observers each time, who then compare notes and build up judgements about each child. Such techniques help observers to assess personality traits rather than the more academic abilities and attainments of the more usual tests and school work, and some feel that these are the most important things we wish to know about the children in this border zone group.

Children can be taken individually through similar experiences, but then the group relationship is lost, and when such individual testing is done the tasks set to the child are usually on rather more conventional lines. Thus in one case some of the tests are written and the rest oral, the whole taking about 1¼ hours. Children do the written work in small groups. On one occasion (*a*) railway posters of holiday places were shown and the children were asked to write a twenty-minute description of a day's holiday; (*b*) children were given a numerical problem test based on a story of three Scouts on holiday. The test involved the use of time-tables, dates, weights and measures and needed the use of logical processes of thought to find the solution; (*c*) the children were given an oral vocabulary test to see if they knew the exact meaning of certain words, and (*d*) consisted of a brief interview to discover special interests and the use of out-of-school hours. As all such tests must be, the type and pattern of tests are, in this case, changed each year.

In another case individual tests devised by the examiner to study verbal and practical ability are taken individually by the border zone group. In a third, children are set to work on activities likely to excite and interest children, sufficiently similar to children's normal occupations to be within their comprehension, and yet sufficiently different to prevent any child from shining because he had played the game before. Among the activities used when this procedure was introduced were building with large fibre cards, drawing forts in chalk on the playground, playing at aeroplanes, searching for lost dinghies, designing relief maps on the floor and arranging pictures. In recent years more scientific tests have been devised, but in all cases the team of observers try to assess the children's ability to benefit from the new conditions of the Grammar School.

It will be seen that these procedures are partly additional tests of attainment or ability to use knowledge (such as the composition and the numerical problem mentioned above), and partly attempts to place a child in a position in which he reveals his personal qualities and methods of work to an observer. In the former case the results may be scored, but in the latter the assessments of the observers can be pooled by discussion as each child is considered.

There is another aspect of the interview which becomes important where, as in a country district, a Grammar School draws its children from a clearly defined area. In this case it is easier to bring the Grammar School itself more closely into the picture. This can be done, of course, without an interview, but interviews are more commonly used under these circumstances. All the forms of interview described here can be used, but there are two unusual procedures that merit special mention.

In the case of this county,[1] the selection procedure falls into two parts. All children take a group of tests which include a composition, and the results of these are then made available to the Heads of the Grammar Schools throughout the county. Each Grammar School then follows its own line in making a selection from the children in its own area and submits to the Authority its reasoned decision in all cases in which it deviates from the strict order of merit list. This method has been in use since well before the war, and those that use it are convinced of its success. In one case a Headmaster who has developed his own techniques over many years, arranges for all likely candidates to be interviewed by a composite panel upon which he and the master in charge of the Junior forms of the school play an important part. They have all the results from the examination before them and reports from the Primary

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[1] W. S. James, *et al.* *Studies in Selection Techniques for Admission to Grammar Schools.* 1952. U.L.P.

Schools together with the compositions written by the children. Their aim in selection is not so much to see whether the child measures up to an abstract Grammar School standard, but to decide whether the child appears likely to benefit from and make a positive contribution to the school for which he is being considered. This school is thought of as a living community rather than a place for academic study, and due weight is given to each child's special gift and his attainments in spheres such as music outside the usual Primary School course. This method of selection and the philosophy behind it is explained more fully in a book recently published by the Head.[1]

A second Head in the same county approaches the problem from a different angle. When the list and the results submitted by the county have been considered, he and two members of his staff set out on a series of visits to the Primary Schools in the district. They take with them not only the results of the examination but information about all the children that have been accepted from each Primary School during the last few years. The children in each school who are being considered are seen for a brief chat by one of the team while the others sit in the background and observe, but this is rather to form a picture of each child than to add to their knowledge about him. Then they consider the real interview begins, and this is not with the child but with the child's teacher. They discuss the child and his results with the teacher and compare and contrast him and his achievements with other children who have passed to their Grammar School. This basis of comparison is marked, since both sides have known the children under discussion, and it is claimed that in this way a fair picture of the children now under consideration can be built up. The adoption of such a technique is limited by the circumstances under which selection must take place, especially the size of the group to be considered, but it appears to have much to recommend it.

In this discussion we have travelled far from the simple, and possibly chancy, interview objected to in the N.U.T. report. The field is not by any means yet fully explored, but enough has been said to indicate some of the ways in which developments suitable to the special circumstances of any area can be considered.

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[1] F. C. Happold. *Vision and Craftsmanship.* 1949. Faber & Faber. Especially Chapter IX.

The main principle behind all these procedures is the same. From a general consideration of the results of all children of an age the field is limited to a smaller group of those whose cases need further study. Then for these children the evidence is considered more fully, other evidence being brought in or sought as necessary, and the child in many cases being interviewed by one of several techniques, until as full a picture as possible has been built up of each child to make a decision. The success of each of the many ways in which this can be done depends upon the clarity and the correctness of the picture obtained. It seems highly improbable that any one procedure will ever be found that is superior to all others. The circumstances under which selection must take place is bound to vary greatly from one area to another, and the philosophy behind the procedure will vary with the educational ideals of those employing it. Uniformity is thus both impossible and undesirable. The important thing is that any procedure should be built upon soundly reasoned foundations and that its results should be constantly checked, modification being made from time to time in the light of the experience that has been gained of its successes and failures. Since selection deals with changing and changeable human beings at an age when there is variable development, no system can ever claim infallibility. All the best procedures can hope to do is to reduce the misfits that result from it to a minimum. This implies opportunity for later reconsideration, and we must now discuss what happens after selection.

CHAPTER X

THE AFTERMATH

THOSE who have anything to do with selection know only too well that period directly after the results come out. However fairly and accurately the selection has been made, there are bound to be some parents who feel sure that their children have not been correctly placed. There may be teachers, too, who find that the results do not fit in with their forecasts. Protests from teachers can be divided roughly into two groups; those that think that certain children should have been offered Grammar School places in preference to others, and those who feel that the awards should have extended further down their order of merit list than they do. The second group are challenging the general standard of acceptance which can after all only be decided by those who have the complete picture. The first are more disturbing. If there are many of them they suggest serious discrepancies between selection results and the feelings of those who know the children best, and this is probably an indication that the selection procedure should be carefully examined. In fact the number of protests from teachers can be taken to be a fair indication of the success of the methods used, since it is reasonable to suppose that there should be fairly close accord between teachers' general forecasts and selection results. Naturally complete accord would be unlikely and some protests must be expected.

Whether protests come from parents or teachers, each must, in justice, be fully examined. How this should be done is a matter of opinion. In some areas the full examination results can be examined by teachers or parents, but many feel that this brings more problems than it settles. In other areas, the weaknesses of the child under consideration are discussed informally with the teacher or parent and it is claimed that a simple reasoned explanation of the child's results can persuade most of them that the decision is fair. In any case, this seems better than merely saying 'the editor's decision is final' and leaving the wound to fester. Of course, there will always be some parents who will not listen to sweet reason in any form, but these are usually very few.

Among the cases investigated there are usually some in which, however fully and carefully information has been collected, new facts come to light that suggest a reconsideration of the decision. To ignore these because of awkward repercussions and possible charges of favouritism is unfair to the child concerned. Surely when such cases arise, and they will be very few, the system should be sufficiently flexible to allow a place to be offered.

In addition to this immediate study of challenges made to the results of selection, there must be some machinery for later reconsideration. Children develop at different speeds and often by fits and starts, so that we must always provide for the late developer as well as for the child who does not live up to early promise. In addition there are the children who fail to fit in to the unaccustomed climate of a new school. To meet such cases in many areas children are allowed a 'second chance'. This may be by an examination set at 12 plus, 13 plus or even later, or each case where selection seems to have been at fault may be considered on its merits.

To set a further examination for all who wish to sit or who are recommended by their heads to sit has some grave disadvantages. Usually there are a large number of candidates and very few qualify for transfer. To a certain extent this may be due to shortage of places in the Grammar Schools for them, although where it is felt that late entry is a good thing space is left in the Grammar Schools for special classes to be formed. A more serious difficulty which is often ignored is the effect on the many children who sit for this second examination and fail to secure a transfer. Until the examination, they are almost bound to look hopefully upon their stay in their present school as a passing phase and therefore never fully become a part of the school. After the result has come they are bound to regard the few terms they usually have left as a period to be filled in. This is hardly fair to the children or the school and, just as we looked earlier at the effect of selection procedures on the life and work of the Junior School, so surely we should have some consideration for the effect of transfer examinations upon the Modern Schools. It is not only the objection often raised by Modern Schools to excessive cramming, this may have to be endured for the sake of the children concerned; it is the effect on the children and the school of by far the greater number who remain behind.

To deal with cases of transfer individually as they arrive brings with it certain administrative difficulties, but has many advantages. One of the arguments used by the protagonists of multilateral schools is that they permit more fluidity within the school. It would appear that this would be achieved by keeping all children under careful consideration and then changing them from one stream to another if this seemed necessary. The decision would seemingly be reached after those who knew the child's work and those who knew the demands of the stream to which the move was suggested, getting together to discuss the case. An exactly similar procedure works equally well where schools are separate entities. The head of a Modern School who feels he has a child more suited to a Technical or Grammar School can recommend a transfer. The Head of the other school can measure up the child in his own way against the standards of his own pupils and, if the child comes up to these, the transfer can be effected. It is true this is all very informal compared with our elaborate procedures at 11 plus, but there is no reason why it should not be. We are dealing now with a few special cases and can afford to study each at leisure. We also have a background of standards against which to judge each case and this makes all the difference. If a parent asks for a transfer then a further step is added, for the Modern School Head must now decide whether he can recommend. If he can, then the case goes forward as before. Naturally such a system demands unprejudiced co-operation by those concerned, but so do transfers within a multilateral school. It is true that the super-headmaster of a multilateral school will be there to see fair play as it were between the members of the staff who supervise the stream, but if such oversight is necessary there is nothing to stop an officer of the Authority assuming this. In fact the problems raised by such a simple method of transfer, given good will and co-operation all round, are less difficult than at first glance they would appear to be.

The advantages of this fluidity are many. A child has no 'second chance', but a chance at any reasonable time if he shows himself to merit it. Transfers can be made at any time. Clearly the earlier they are made the better and, by this individual method, full advantage can be taken of this. Then since each case is considered on its own merits, it can be more closely studied than is possible when a number of probables and possibles are considered at once. Lastly, the Modern Schools and the bulk of the children in them are less disturbed. Of course, the adoption of such a policy would affect those areas where places are left for whole classes at 13 plus. This would make more room at 11 plus, and surely it is better to admit all children who are to come to a school as early as possible and then provide possibilities of transfer rather than leave a void to be filled by a whole group who have been following a different curriculum for two important years. If the number of transfers were large, then the picture would be different, but, if selection has been carried out reasonably well, they will be small. It must be remembered that the children whom we seek to transfer to the Grammar School at this stage are those who are clearly wrongly placed elsewhere, not those who might, if given the chance, possibly scrape along at the bottom of a C form.

The transfer of children from Grammar Schools to other forms of Secondary Schools presents less problems. The decision here can be soundly based on the record of the child over a considerable period. Just how long this should be is a matter of opinion, but usually two years is looked upon as reasonable. At times a child shows clearly a failure to fit in to the new environment in less time, but most Heads would prefer two years to give the child every chance. If the child remains in the Grammar School for more than two years and then is transferred, so little time is left for the alternative course to be developed that the child is almost bound to leave school without achieving anything satisfactory. The transfer is surely designed to give the child a fresh opportunity to find himself and he needs time to do this.

Bad conduct alone would seem never to be a good reason for transfer, although failure in school work can often lead to disciplinary trouble and vice versa, so that many children transferred may present problems of this sort. In fact, lack of success by itself would not seem to be a good reason for transfer. The child whose work is poor may still be getting a great deal of good from the atmosphere of the school. It may be that no child should be transferred for poor work alone but only if his failure is leading to his unhappiness or to conduct difficulties on the one hand, or if unavailing efforts of help on the part of his teachers is leading to too great a diversion of their time from pupils better able to benefit from the course. In one area, after two years, the lower children in the Grammar Schools and the upper children in the Secondary Modern Schools all take a series of examination papers. On the results of these some transfers between the schools are arranged. This seems to presume a parallel syllabus and a similar approach for all these schools, which is hardly likely to be correct. In any case, the procedure would appear to be too mechanical to suit the circumstances. If cases for transfer into Grammar Schools need individual study surely transfers in the other direction need even more careful study. Consultation with parents should also play a very important part and transfers should only be made after all other solutions to the problems have been tried.

To sum up. Fluidity should be a reality and not a pious hope. There should be simple but effective means to bring transfers about. Any procedure should provide for the study of each child by those who know him best, with the co-operation, where appropriate, of those who know the standard required for promotion. Transfers into a Grammar School should be made gladly and as early as possible: transfers from a Grammar School should be made reluctantly and only after all other solutions have been tried. The procedure for both should be planned to upset as little as possible the smooth running of the Secondary Modern Schools.

In a way the question of early admission is linked with this part of our survey. In a number of areas children who show special promise are allowed to sit for selection tests before the normal age of transfer. Such children are sometimes recommended by their Heads for special consideration, sometimes an I.Q. of 130 plus is taken to be a measure of promise, and sometimes any child may sit whose parents wish him to. In considering the results age allowances for a child a year older than the candidates are often allowed so that only the most brilliant are selected at this stage. Sometimes social maturity and physical development are taken into account as well as intellectual promise. In many areas no provision for early transfer is made.

Generally speaking a child should be allowed to develop at his own speed. Schools are organized and the school curriculum is planned to meet this general requirement. In recent years there has been a tendency to begin to teach some skills rather later than previously was the custom. Thus it was found that the failure of some children to learn to read could be traced to the initial attempts being made too early. Similarly the teaching of long division in arithmetic is now often left later in the course because it is found that older children can grasp the ideas behind the process more easily and quickly and pick up in a few lessons what used to take hours of grind. The idea behind both these changes is one of intellectual maturity which is rather more than sheer cleverness.

Promotion within the Junior School is now usually based upon age. This has its advantages and its disadvantages for the child. At one time there was much 'double promotion' when a bright child jumped a form and took his place among older children because it was felt he was as advanced in his work as they were. Sometimes such experiments were justified and the child progressed, but often they were not. The child found the new work, with a gap of a year's processes behind it, too much for him and, unless this was quickly recognized and an adjustment made—not an easy thing to do—the child suffered.

The idea of educational maturity as distinct from intellectual precocity and our experience of the dangers of 'double promotion' must influence any decisions about early transfers.

On the other hand, it is just as important not to keep a bright child back as it is not to push a normal or a dull child too fast. It is as easy to upset a child who is ready and eager to read by not allowing him to begin as it is to force a dull child to start reading before he is ready for it. Much must depend, therefore, upon what the brilliant child will do if he does not pass on as an early entrant to the Grammar School.

It is easier to solve this problem, as so many others, in a large school than in a small one. In the A class of a three-stream Junior School the children at the upper end of this stream will usually all be pretty bright. There will not be much to choose between them, so that there will be adequate competition for all and no child's rate of development should be stunted. In the single stream school, however, and more especially in schools smaller than these, there can be occasional children who stand head and shoulders above their fellows and who cannot easily be catered for by their teacher, faced with a wide range of intelligence and possibly age as well. Thus any decision about early transfers will have to take into account the general picture of primary education in the area.

It is sometimes claimed that, whatever the alternative in the Junior Schools, the brighter children would benefit more from an early transfer to the Grammar Schools. Again this is a matter of opinion, but two points seem worth discussing. Education is not a ladder but a wide flight of steps. Children do not develop along the narrow lines of skills alone, but spread out from these fundamentals along a wide front of progress. Too often so much attention has to be given to the skills that insufficient time is left to enable the child to range far and wide, using these skills and broadening his knowledge and experience. Provided the clever child can be given suitable opportunities to carry out this expanding process before leaving the Junior School and at the same time follow up his special interest in developing his skills, he will probably derive so much benefit from his last year in the Junior School that he will make a better job of his Grammar School course than if he plunged straight into it.

If he does come into the Grammar School a year earlier than his fellows, what happens to him? Now that the age limit for the General Certificate of Education has been, to all intents and purposes, abandoned, he will probably sit for his Ordinary level subjects after four years and enter the Sixth form at 14 plus. (If he sits after five years instead of four, the whole point of his early entry is lost.) He can then look forward to either three years in the Sixth and an early entry to the University or four years in the Sixth. Maturity is much more important at University entry than earlier, and the wisdom of entry to the University before 18 must always be something of a gamble because of the new demands that a University makes upon its students. Four years in the Sixth also presents many problems. Considering these difficulties, is the clever child really better served by early entry to a Grammar School? As has already been said, it is largely a matter of opinion, and opinion based upon a study of local conditions, but at least no decision to allow early entry should be made until all the pros and cons have been fully considered.

It is a matter of history that entry to Technical Secondary Schools comes more often at 13 plus than at 11 plus. Technical Secondary Schools have developed from Junior Technical Schools which usually offered a course at 13 plus, and it has not been possible, in many places, to depart from this pattern yet. In theory the children passing to Grammar and Technical Secondary Schools should be drawn from those of similar general ability but varying aptitudes and aims. In fact it has already been shown how difficult it is to guide children in this matter by tests, because well-defined aptitudes appear to be the exception rather than the rule. Interests and aims can, however, vary and guide the decision, but the main point is that, if Technical Secondary Schools are envisaged as having Sixth forms and sending children as frequently forward to further technical education as the Grammar School pupils pass to advanced academic courses, then each school must draw fairly evenly from the pool of general ability. This is not the place to discuss the validity of this general assumption or the philosophy behind the Grammar-Technical split, but to discuss the implications of this assumption for selection.

Selection for Secondary Technical Schools at 13 plus means a serious interruption to the steady progress of the work in the Secondary Modern Schools. The fact that it comes after the Grammar School selection also means that, in fact, the children selected for the Secondary Technical Schools come from a lower mental ability group than those who pass to the Grammar Schools. It is difficult to imagine a parent or a child being willing to forgo the offer of a Grammar School place at 11 plus so that the child can wait in the Secondary Modern School for two years and then run the risk of not being offered a place in the Secondary Technical School. Also it is difficult to imagine that generally speaking a child who has settled happily in a Grammar School will wish to transfer at 13 plus to a Secondary Technical School. The Secondary Technical School will more likely attract, if at all, those whose two years in the Grammar School have been unfortunate.

For both these reasons, the 13 plus examination for secondary technical education must be considered to be a bad thing and something which should vanish as soon as possible.

Selectors are faced with a number of special problems to which, more or less, simple solutions are usually available. Children who are ill when the first tests are taken are usually catered for by an alternative examination. There is always the child who does not even accommodate himself to this pattern; he may have measles on the first occasion and break his leg before the second or in some other way prove troublesome. In this case, co-operation between the school and those who may be called upon to receive him can usually handle him as a special case. Children in independent schools from whom, because of the selected nature of their entrants, school records and reports cannot so easily be used, in these days usually sit for the test. If orders of merit are used from the schools many of the difficulties of school records vanish, and thus the picture of these children can be as full and comparative as those from schools with a more normally arranged section of the population.

Admission of children from other areas within the country are usually arranged on a simple like to like transfer basis, but this cannot be applied when children come from areas with a different educational system. Then each case must be treated on its merits and simple tests by those who know the standards required in the schools to which the children seek admission can usually settle the problem.

All this goes to show that selection and review is a continuous process. The main decisions may be made for the great majority of children at one time and once and for all, but special cases, for a variety of reasons, may need individual consideration at almost any time. The machinery of selection must, therefore, be deployed so that it can cope with this. The most effective and satisfactory development is probably to provide no more apparatus for mass measurement, such as 13 plus examination, but to devise simpler and more personal methods to suit the special circumstances of each child who comes up for consideration.

CHAPTER XI

RECORD CARDS AND SELECTION

IN the first flush of enthusiasm after the passing of the 1944 Education Act it was suggested in some quarters that selection would soon be made from School Records alone. In spite of this, and not because of any unwillingness on the part of those dealing with selection, Record Cards as such are seldom used in selection procedure and never to the exclusion of all else. Why is this?

Record Cards have two primary uses. By focusing the attention of the teacher upon each individual child in turn they lead to valuable case study and thus have value to those who make them. By the records set down they enable information to be passed on to those who need to know more about each child. Those who are most likely to consult the cards are the Head and the class-teachers in the schools, those dealing with selection on transfer, that is, educational guidance, and those dealing with the transition from school to work, that is vocational guidance. Record Cards are confidential documents, and some objections can be raised to anyone but the teachers themselves having access to them. Such objections are more usual and more valid, if at all, when it comes to their use for vocational guidance, than at the end of the Secondary School selection stage. This is not the place to discuss more fully their use in school but to keep to their possible use and selection.

Much of the information collected for selection could quite properly be shown on the Record Cards, but it is often more convenient to set this out in specially prepared summary sheets on which are recorded data for the whole group of children being considered. When this is done, Record Cards must be looked upon as supplementary to this basic information. That is, Record Cards are most likely to be used in cases where there is some doubt and where children are being considered individually.

At this stage the selector is seeking for three sorts of information. He may wish to check the information he has collected about the child's attainments and potentialities; he may wish to know more of the child's temperamental qualities and interests; he may be helped by having access to any special information about the child.

Where school records of attainments and potentialities are taken fully into account from an early stage in the selection procedure, these may already have been abstracted from the Record Card, or from other school sources and gathered into the summary sheets mentioned above. Where they have not, the selector will wish to find on the Record Card information in a concise and fool-proof form, concerning not only the more recent result of attainment and intelligence tests, but also those for other years in the Junior School. Difficulties of showing such facts in readily comparable form have been considered when the results from tests have been discussed above, so there is no need to go over them in detail again here. It is enough to say that class positions, as far as attainments are concerned, may be more useful than marks. To obtain such positions for a group greater than the school would be almost impossible unless standardized tests were taken at intervals during the Junior School course by all children. It may be thought wise to do this. On the other hand, in most cases, comparison within a school can be very helpful. For intelligence measurements, of course, standardized tests will have been used and the difficulties of comparing the results for these need stressing again here. Apart from these difficulties the recording of this type of information on Record Cards, and its use by selectors, presents no particular problems.

The diagnosis and recording of temperamental qualities for Record Card purposes bristles with difficulties. How far such qualities can be assessed for each child in a large class is open to doubt. How far such qualities are specific to particular circumstances, both of subject, the climate of the class and the school and the child's reactions to particular teachers, is very difficult to decide. How far such qualities can be assessed in terms of marks or grades, however carefully these have been defined, is a disputable point. Some Record Cards provide for very detailed and thorough studies of such matters, but although these may have other uses, the results are of little value to the selector. In his individual studies, the selector is faced with the need to take such an analysis and re-synthesize it and such a building up from the scattered details is almost impossible. This same problem is faced by anyone else using the card for any similar purpose. To obtain a true and balanced picture from up to a dozen grades is just not possible and thus it seems necessary to turn to some simple method. The teacher can probably help most by giving a thumb-nail sketch of the child, that is, a synthesis rather than an analysis. This can stress those points which he feels need stressing, that is, he can record deviations from the normal. But there will then be no standard form for all comments and such reports may not be easily compared. If some framework is considered necessary then perhaps a series of contrasting adjectives can help us. The example given below selects a few contrasting pairs that appear to be important from the school's point of view:

Keen	Indifferent
Communicative	Reticent
Thorough	Casual

A tick against any of these indicates a quality that seems worthy of record. No tick at all means that the child has not special qualities to which the teacher wishes to draw attention. Such a picture can be given simply and quickly each year or each term of a child's school life if this is felt to be necessary. Such information is easily recorded and simple to use. Probably the most useful record from the selector's point of view is a combination of thumb-nail sketch and simple pattern. It must always be true, however, that both of these have a strong subjective element and are better used for comparison between children in the same school or taught by the same teacher rather than within a wider group.

Assessment of a child's aptitudes can again possibly be of more value to the selector if they indicate exceptions. Again assessments based on a grading for each child on all aptitudes, such as verbal, practical, musical, aesthetic and the like, tend to obscure the picture, and the concentration upon those aptitudes that need special mention for any child can give a simpler and more useful picture. Again a list of aptitudes with ticks can be helpful. Interests can possibly be assessed in the same way with the reservation that a child's dominant interests are not necessarily shown fully in school work and may be difficult for a teacher to assess.

Whatever methods are used on School Record Cards, the aim must be clarity and simplicity. In this way the teacher's time can be saved and records can be more easily and quickly interpreted.

Record Cards usually provide for other information under such headings as medical information, home circumstances and attendance. It is suggested here again that entries should only be made where they have some special significance. For most children there will be nothing special to report. This makes any entries that are made more significant and therefore more useful.

It would appear from this that when we get away from the recording of facts regarding attainment and potentiality, it is a matter of providing spaces on the card for use where the teacher feels the need to draw attention to the special and the unusual. Regarded in this way Record Cards can be less of a burden on the teacher and, at the same time, more valuable to those who have to consult them. This is certainly true where selection is concerned. A Record Card that follows these general lines is shown in Appendix B, pp. 122-3. Some Record Cards at present in use are just an impossible nightmare to those who have to consult them.

It may be objected that for some children fuller records than this are needed because they present complex problems. Educationally sub-normal children, the maladjusted and those presenting special conduct or social difficulties may need more detailed analysis and study. It is suggested that because of this there is room in the schools for two types of card: the skeleton card providing as it were facilities for a picture of the normal child, and a much more detailed card for the exceptional. The use of these two cards in appropriate cases could do much to reduce pressure on the teacher and enable him to use his efforts more effectively, and has much to recommend it.

Whatever is done it seems improbable that the Record Card can ever be the main tool of the selection, but it can be a most helpful aid in studying individual cases.

CHAPTER XII

PREMATURE LEAVERS

EACH summer a new group of children are offered places in Grammar Schools. September finds these fledgelings preening their fresh feathers and eager to try their wings in new surroundings. Unfortunately each year also sees a number of their rather older brethren slipping away too soon to the world of work. These premature leavers are forsaking the school they entered with such high hopes, possibly disillusioned, but certainly before the course they set out to follow has been completed. To some extent this makes selection a mockery. Why does it happen? Can we learn anything from a study of such early leavers to enable us to guard against it in our selection methods? There have been many studies of the accord between the information used in selection and success in the Grammar School course. Methods have been much improved by studying their results. Little consideration seems to have been given to the relationship between selection and premature withdrawals. In Southampton some study has been made of the reasons for premature withdrawals and the relationship between such withdrawal and the results of Moray House Tests at 11 plus. The results must needs be taken with extreme caution, first because the numbers are comparatively small, 322 spread over three years, secondly because the reasons for leaving are to some extent personal conjecture, but mainly because premature withdrawal depends so much upon the social setting, that what holds good for one community may be entirely different from what happens in another. It does seem, however, that the study of premature withdrawals may be one way of criticizing and improving selection, and that is why the Southampton study is reported here.

A premature leaver was taken to be a child who left school without sitting for any ordinary level subjects in the General

Certificate of Education. This usually meant a child who left before completing the fifth year of the Grammar School course. After studying brief reports on the reasons for withdrawal it was decided to codify the main factors which appeared to lie behind these withdrawals and try to express the reasons for them by means of this code. The code that appeared to cover all the important factors was as follows:

- A. Home conditions
  - (*a*) Financial difficulties
  - (*b*) Broken home
  - (*c*) Lack of parental support
- B. Health of the child
- C. Low ability as shown by school work
- D. Pull of a career
- E. Temperament
  - (*a*) Lack of will to work
  - (*b*) Anti-social attitude

It was found possible to express each of the cases under review satisfactorily with this code but, of course, local conditions might call for a different pattern. The importance of using an agreed code lies in the opportunity it provides for building up a composite picture of a group of children. The use of the code may, however, vary considerably from one school to another since opinion and interpretation must enter into its application so that it appears wise to make a composite picture for each school. The following pattern emerged for the study of 80 boys who left one large school over a period of three years.

In 30 cases only could the withdrawal be ascribed to one factor alone. Of the remaining 50 most could be explained by two and some seemed to required three or four. Of the 30 simple cases, 10 boys appeared to lack the will to work, 8 had an over-riding desire to take up a particular career, usually the sea, 7 were too much handicapped by low ability, and 5 were hampered by difficult home conditions. It should be recorded that in Southampton approximately 25% of the boys pass to Grammar Schools.

Taking the group as a whole, difficult home conditions (mainly financial troubles), and low ability were recorded as a factor behind the withdrawal in an equal number of cases, that is 34. In rather less than half of these cases both home conditions and low ability appeared to operate. The pull of some particular career was a factor in 15 cases, and lack of the will to work in 16. It was, perhaps, significant that in about two-thirds of each of these groups this was the only reason given.

The Head of the school also most helpfully explained the attitude of himself and his staff to each withdrawal. Of the 80 boys, 26 left against the advice of the school; in more than half of these there were home difficulties. In 43 cases it was felt that it was better for the child's sake he should go, and in 15 cases the boy's influence in the school was bad and therefore it was felt to be best for him to leave. In four of the cases the withdrawal appeared to be best for both boy and school. In more than half the 43 cases, where it was felt withdrawal should be condoned for the sake of the child, there were home difficulties. Since home financial troubles occur frequently in these cases it should be explained that the maintenance allowances offered to boys remaining on at school after school-leaving age are generous, and it is doubtful whether an increase in these would go very far to solve this part of the problem.

Unfortunately the Moray House Test results upon entry were only available for those children who left in the last year which was being considered (1951/2). Taking the three schools in which numbers were sufficiently large to warrant study, and looking at the picture in a very general way, it would seem that in the two boys' schools (26 and 20 leavers respectively) there was no relation between premature withdrawal and arithmetic. There was some indication of a link between low intelligence test results and withdrawal, but still nothing striking. English, however, did seem to be much more decisive. In the case of the one girls' school, where there were 25 withdrawals, there appeared to be very little link between withdrawal and arithmetic and English, but rather more with intelligence. The difference between boys and girls may be due to the smaller number of places (20%) for girls compared with boys. That is, on the whole, their attainments are higher and therefore probably all those passing to the Grammar School have a sufficiently high academic standard to enable them to cope with the course. The closer link between English and withdrawal among the boys may possibly indicate that the course is demanding rather more from the boys on this side of their work than some are able to give. This may mean that too many are being selected or it may indicate the need for more stress to be placed on the English results round the border zone of selection.

This investigation has been described in some detail to indicate the sort of information that can be obtained from a study of premature withdrawals. The only conclusion that can reasonably be drawn from it is that it is worth while continuing the study. It appears to be a useful new way of looking at the results of selection and we cannot afford to neglect any opportunity to study these. If it can show us ways in which even a small part of this wastage can be avoided it will be well worth the trouble.

To finish on an encouraging note. In Southampton during these three years the number of leavers steadily fell from 125 to 108 and finally to 99. It is to be hoped the same thing is happening elsewhere. In Southampton the abnormally high number of withdrawals in the first year (1949/50) would appear to be part of the price paid for evacuation and all its attendant complications.

CHAPTER XIII

SELECTION OR ALLOCATION?

BEFORE looking ahead in a more general way, as we shall do in the final chapter, a word must be said about the way in which we describe the work we are doing. Selection is the traditional term but not the only one, and recently the term 'allocation' has been used. Allocation is in many ways a better term than selection. Selection suggests picking out certain children and leaving the rest; allocation suggests placing each child where he can derive most benefit from the secondary stage of his education. Before allocation in its true sense can be attempted the pattern of secondary education must be more clearly seen than it is now. We think we know what we mean by Grammar and Secondary Technical education, but with the changes that should result from the adaptation of the educational system to new social conditions any forecast of the position and aims of such schools during the next half-century would be rash. In 1902 nobody could have foreseen the development of Grammar School education that has been the most striking educational phenomenon of the first half of the century. Still more striking changes may be in store. These may appear in the as yet only partially exploited potentialities of the Secondary Modern School. It is not suggested that the idea of allocation should hang fire until these developments have taken place. In fact the idea of allocation, the idea of studying and sorting the pegs, may of itself help us to see more clearly the shape and design of the holes we should prepare for them. Thus selection can be constructive in its own right. The more we know of the methods and results of studying children the better we shall be able to assess the ways in which they can best be educationally served.

Such a process as this is almost bound to start from the top, that is among the more able groups of children. For the sake of simplicity much of our discussion here has had in mind selection for Grammar School education, but in many areas this is complicated by the need to select also for Secondary Technical Schools. Some of the difficulties inherent in doing this more or less mechanically by tests have already been discussed. We have seen something of the adaptability of children, the large majority of the more able of whom appear to be capable, as far as tests can tell us, of succeeding equally well in Grammar and Secondary Technical Schools. We have seen how interests and the aims and wishes of both children and parents may be the deciding factor behind the choice between these two forms of secondary education. These again may be influenced by changing social conditions which already seem to be turning at least some children in some districts away from the Grammar School and towards the Secondary Technical School as their first choice. It may be that as other forms of particularized as opposed to specialized education develop in our Secondary Modern Schools the same considerations will apply. Just as an adult or a child leaving school with a certain level of ability finds a range of occupations from which he can select, so the child at 11 plus may find a variety of choices of secondary courses open to him. Selection then will begin to become allocation, and this implies still more detailed study of each child or at least of the children in the border zone at each level of ability. Thus if for a moment we consider the Grammar School and the Secondary Technical School to recruit at about the same level of ability we shall have one border zone here. Another may develop at a lower level of ability for children entering courses in Secondary Modern Schools from which they may pass to skilled craft jobs on the one hand and clerical work on the other. Or the choice may be based on specialized abilities and interests, such as art and craft on the one hand and music on the other. Such developments are already taking place in some areas and such selection or allocation is therefore necessary. There are two sides to it as in all selection, level of ability and special interests and bents. The principles and techniques discussed above can be adapted and elaborated to meet these new conditions as they arise. In this way selection can gradually move towards allocation, but the process is bound to be slow. In the meantime the more techniques are studied and improved under the present more simple conditions the better we shall be prepared for allocation to a more complex pattern of educational opportunities as these arise.

CHAPTER XIV

LOOKING FORWARD

IT is so easy in discussing selection to concentrate upon the technical details and to fail to see the whole problem with its parts in perspective. Broadly speaking there are three main elements in the picture. The broad backcloth of its setting is the general philosophy of educational thought and the pattern of educational provision that results from this. Before this backcloth are grouped the players; rather like the virtues and vices of the old morality play. These are the aspects of the child about which information can be collected. Now we come to detail. The special characteristics and interplay of these characters must be our special study. This is where technique comes in, but technique by itself is not enough. The selector must keep his eye all the time on the setting of the play, the careful choosing of his actors as well as the development of their personalities upon which his story depends. The techniques of selection are even more only a part of the whole than the techniques of acting. To focus too much attention upon techniques is to blind oneself to the larger issues.

We live in an age of violent social revolution with rapidly changing values and our educational philosophy is as unstable as any other facet of our thought. The changes are so violent that although we recognize we are in a state of transition it is difficult to say whither this is leading us. The 1944 Education Act, revolutionary though it was, did not present us with a clear and finished plan for a new system. It simply provided new opportunities for development. Similarly the General Certificate of Education sets a new and less rigid pattern offering a challenge that is only gradually being accepted. The ultimate results of these important departures from the old order cannot yet be seen. Selection must be planned with this developing pattern always in mind. The selector is one of the handmaids of this process and can do little to control events. As the educational system he serves assumes new shapes he must be prepared to adapt his plans to fit them.

We cannot yet assess fully the effect on the Grammar Schools of either the changing demands of the new social and economic order, the effect of exclusion of fee-payers or the new structure of the curriculum resulting from the changed examination requirements. We cannot yet tell how the Grammar Schools are likely to be affected by the growth and development of secondary technical education. Nor can we foretell the part that Secondary Modern Schools are likely to play in the new system. Up to now it has been possible, with some slight modification, to carry forward from the old days methods of selection which were primarily aimed at picking a small proportion of the better pupils for admission to the Grammar Schools. The need to allocate to various forms of secondary education rather than select for one is bound to show itself more and more as our educational system is enriched by a wider variety of real choice. The possibility therefore is that the problem will grow in complexity. This will present problems of real educational guidance that will need more careful, and possibly more elaborate, planning than anything we have to-day. In this connexion we need to beware of over-elaboration. All planning should aim at a combination of efficiency and simplicity.

Thus to the immediate problem of trying to perfect a system to meet existing circumstances must be added a further and changing problem, that of flexibility to meet new circumstances as they arise. Thought is always being given to this. Thus the means by which children can be advised to take up Grammar or Technical courses where these alternatives are offered has already been discussed. Where Secondary Modern Schools offer special courses of one sort or another special consideration is being given ways and means for catering for this. As time goes on such problems are bound to multiply and possibly much of the development of selection procedures in the future will come in response to this demand.

In selection procedures the most notable development of the past decade has been an increase in the number of sources from which information is sought. The one-day exam has almost disappeared as the sole source of information. At the same time the need has been felt for fuller information about each child. To attainments and potentiality has been added personal qualities and interests. To test results have been added teachers' assessments. This broadening of the field is likely to grow rather than diminish. With its growth comes the increasing difficulty of arranging and assessing the facts to give clear pictures of individuals and groups. The difficulty of solving this part of the problem has to a certain extent limited the field from which information could be drawn. As these difficulties are overcome we can expect more information to be brought in to help reach decisions. It is the assessments and opinions of the teachers that are most awkward to handle and yet are so very important. It is to be expected, therefore, that there may be a swing of emphasis away from testing and towards teachers' assessments. To some extent this is already taking place. It does not mean that tests are likely to be abandoned. They alone can give us a universal, unbiased measurement, but they are less intimate and less complete than a teacher's knowledge of his pupils. Once better ways of using the latter have been found the chances are that tests will be used more and more as background information that sets a standard against which the less easily handled, because more subjective, information can be evaluated.

New tests and tests covering new ground are sure to come along. Each will need thorough investigation before it is adopted, and then careful introduction. We have seen that tests of interests have been produced experimentally; the Duplex tests[1] claim to show the strengths of a child's aptitudes. These are only two of the fields in which progress may be made. What is even more important, we are gradually finding out more about the tests we are using. Speed in arithmetic tests and coaching for intelligence tests are two of the fields in which investigation is showing us some of the limitations of present tests. It is perhaps more important to gain a fuller understanding of the exact significance of our present tests than to set out to find tests covering new fields.

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[1] Published by Harrap.

In no field of educational work is there so much checking and testing as in selection, and we can expect this study to go on. Follow-up studies have already been made in many quarters to see what happens to the children after selection and follow-back studies of children who have been some years in Grammar School. We have already discussed another aspect of this work in the previous chapter. Where the success of selection is being examined the difficulty of finding a satisfactory criterion is very real, and so often the findings are based on the results for a group unsupported by case study.

The criterion by which the efficiency of selection has been judged by most investigations has been success in School Certificate or in the ordinary level of the General Certificate of Education. The suitability of this criterion has been questioned from two points of view. In the first interim report[1] on selection by the National Foundation of Educational Research, such a criterion is attacked from many angles. Instead the adaptation of the child to the secondary course at 13 is proposed. On the other hand Dr. F. C. Happold[2] would prefer to wait longer and to bring children Sixth form careers more closely into consideration. Both these reports agree, and all but the most dyed-in-the-wool statisticians would concur, that a criterion of examination marks by themselves are a poor substitute for the full assessment of all the varied and rich heritage that can come to the successful Grammar School pupil. The Foundation's suggestion that children should be allocated to schools in accordance with their possession of minimum qualifications and then to review the results at 13 looks very much like avoiding the real issue at 11 and starting far too many children off on the wrong path. However, it would be interesting to see the practical implication of this suggestion worked out, and it is to be hoped the Foundation are following this up. Dr. Happold is all for case studies, and there is a great deal to be said for this approach provided the net is spread widely enough to cover a cross-section of a school community and give numbers sufficient for a pattern of reactions to emerge. It may be that the criterion of the validity of each component in selection can best be roughly checked against some simple examination criterion at 13, 16 or 18, but that the success or failure of the selection of the children themselves, widely based as we hope this will be, can better be judged against a broad study of the success or failure of each child individually.

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[1] A. F. Watts and P. Slater. *The Allocation of Primary School Leavers to Courses of Secondary Education.* 1950. Newnes.

[2] F. C. Happold. *Vision and Craftsmanship.* 1949. Faber & Faber.

Just as selectors are constantly checking their tools and criticizing their results, so they are busy developing new procedures. Nobody who has come into contact with the work going on up and down the country can but be impressed by the great variety of patterns that are being followed. All this is very healthy especially as it is the exception rather than the rule to find that a pattern is static. There is no indication that these experiments are converging towards a common pattern for all selection. Rather there is plenty of evidence that individuality in procedure is becoming more marked even though in many areas similar basic tests are used. This seems to suggest that many 'good' procedures are likely to arise rather than one 'best'. This is all to the good since the pattern of secondary education is bound to vary from one area to another and selection should be a tool specially designed to serve the local circumstances.

The need to study the effects of selection procedures upon both the Junior School curriculum and the unsettling of the Secondary Modern School course has already been mentioned. Much thought should be given to both these problems. No 11 plus selection procedure should be considered satisfactory that does not fit naturally into the programme which Junior School teachers feel to be desirable for the children in their charge. Similarly no procedure should be so complex that it bears too heavily upon the time which Junior School teachers should be giving to the progress of their children. The whole study of these secondary effects of selection upon the children's work both before and after 11 plus should be looked upon as a problem for urgent consideration and taken in hand at once.

Selection is a servant of the educational system rather than a master. It is a means and not an end. Perhaps we have been giving too much attention to the means and too little to the end. Possibly some of the effort that has been put into selection for secondary education should be directed towards a fuller study of the shape and purpose of secondary education itself. There is no doubt the latter is more important from most points of view, but for the individual child and his parents the immediate problem is concerned with selection. That is why, although we must scheme to provide more varied and more apt alternatives for fruitful secondary education, we must also strive to make more efficient and more certain our methods of allocation to the courses that are offered at any given time.

In education, as in all other facets of our lives, thought and practice are on the move. It does seem, however, that we have reached a stage in the field of selection where we should take note of our position. It is in the hope that such a survey as this may assist in the sort of reflection that leads to further progress that the compilation of this book has been undertaken.

APPENDIX A (pp. 120-1)

AN ARITHMETIC PROBLEM TEST

Southampton Education Committee, 1953

N.B.—A twenty-five-minute test of thirty items was found to be as efficient as a forty-minute test of fifty items.

APPENDIX B (pp. 122-3)

A SCHOOL RECORD CARD

Southampton Education Committee

APPENDIX A

SOUTHAMPTON, 1953
ARITHMETIC II
(Problems)

Answer as many of these questions as you can. If you can do the question in your head you need not show any working. You will have 25 *minutes* for this section.

	Write your answers here	*You may use this column for any working you have to do*
1. 14+37+13	....	
2. Divide 856 by 8	....	
3. What is the cost of 20 twopence halfpenny stamps?	......s. .....d.	
4. How many ounces are there in 2½ lb?	.... oz.	
5. There are 7 girls in a net-ball team. How many teams can I get from a school of 245 girls?	...... teams	
6. What must be added to 147 to make 305?	....	
7. Write 163 inches in feet and inches	.....ft. .....in.	
8. There are 96 lb. of apples in a crate. How many lb. are there in 12 such crates?	.... lb.	
9. Note books cost 4d. each. How many can I buy for 9s. 8d.?	...... books	
10. A coach journey began at 2.15 p.m. and ended at twenty minutes to five the same day. How many minutes did the journey take?	.... mins.	
11. Write in figures the number that is one hundred and one more than ten thousand	....	
12. A carpet is 4 yards long and 3 yards wide. What is the distance round the edge?	.... yds.	
13. An aeroplane travels at 450 miles an hour. How many minutes will it take to travel 90 miles?	.... mins.	
14. A lorry loaded with coke weighs 3½ tons. The lorry itself weighs 30 cwt. What is the cost of the coke at £5 a ton?	£	
15. Add together 1¾ and 2⅝	....	
16. I bought 2 lb. of sausage at 2s. 8d. a lb. and 5 eggs at 4½d. each. How much did I spend?	......s. .....d.	
17. A churn contains 5 gallons of milk. Seven dozen ⅓ pint bottles are filled from it. How many gallons of milk are left?	.... gals.	

	Write your answers here	*You may use this column for any working you have to do*
18. Seven years from now Mary will be 21 years old. In what year was she born? . . .	....	
19. John bought a suit for 5½ guineas. What change did he get from £6?	......s. .....d.	
20. How many furlongs are there in ·75 of a mile?	.... furlongs	
21. A train left Southampton at 11.20 a.m. and arrived at Waterloo at 1.5 p.m. It travelled at 44 miles an hour. How far is it from Southampton to Waterloo?	.... miles	
22. What fraction of a gallon is 2 quarts 1 pint?	....	
23. A man weighs 10 st. 2 lb., his son weighs 4 st. 13 lb. How many pounds heavier is the man?	.... lb.	
24. 6 inches on a map stands for 1 mile on the ground. A road measures 1½ inches on the map. What is the length of the road in yards?	.... yds.	
25. Take the smallest from the largest: ·75, ⅞, ½, ·25	....	
26. A clock which loses regularly was set right at midday yesterday. It was 9 minutes slow at 6 a.m. to-day. What time will it show at 6 p.m. to-day?	.... p.m.	
27. A canteen needed 2 gallons 2 quarts of milk for making tea. Half a pint was used for every 9 cups of tea, which was sold at 3d. a cup. How much money was taken? . .	......s. .....d.	
28. A boy decided to save £5 in a year. He saves 1s. 6d. a week for the first 23 weeks and 2s. a week for the next 20 weeks. How much a week must he save for the rest of the year?	......s. .....d.	
29. Halfpennies, which are one inch wide, are placed touching one another in a straight line 5 yards long. 5 pennies stretch as far as 6 halfpennies. What would be the value of the line if pennies were used? . . .	......s. .....d.	
30. A case together with 64 packets each containing 2 lb. of sugar weighs 1¼ cwt. The case alone weighs 8 lb. What is the weight of one empty packet?	.... oz.	

LOOK OVER YOUR WORK UNTIL TIME IS UP

SOUTHAMPTON EDUCATION COMMITTEE

CONFIDENTIAL

SURNAME

CHRISTIAN NAMES

DATE OF BIRTH

VERIFIED BY

ADDRESS
1. ....
2. ....
3. ....
4. ....
5. ....
6. ....

SCHOOL	DATE OF ADMISSION
1.	....
2.	....
3.	....
4.	....
5.	....
6.	....

ENVIRONMENT ....

	JUNIOR								
	Y1		Y2		Y3		Y4		SECONDARY
ATTAINMENTS	A.T.	O. of M.	A.T.	O. of M.	A.T.	O. of M.	A.T.	O. of M.	Course and Form Position
English Comprehension									
English Expression ..									
Arithmetic									
Intelligence Test used									
GRADE/IQ									
ATTENDANCE									

HEALTH ....

	JUNIOR		
TEMPERAMENT (tick)	Y3	Y4	SECONDARY
KEEN			
INDIFFERENT			
COMMUNICATIVE			
RETICENT			
THOROUGH			

ERRATIC			
STRONG SUBJECTS ..			
WEAK SUBJECTS ..			

OFFICES HELD ....

REPORTS—FINAL YEAR INFANTS ....

FINAL YEAR JUNIORS ....

FINAL YEAR IN SCHOOL ....

Enter any further information on the back of the Card	EMPLOYMENT	DATE OF LEAVING

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INDEX TO REFERENCES

Bagley, E. H., 30
Ballard, P. B., 27, 31
Binet, A., 36
Boyd, W., 28
Burt, C., 28, 31

Canham, J. W., 48
Cast, B. M. D., 28
Cox, J. W., 57

Davies, J. B. T., 67

el Koussy, A. H., 58
Emmett, W. G., 35, 42
Eysenck, H. J., 61

Finlayson, D. S., 29
Fleming, C. M., 55

Hartog, P., 28
Happold, F. C., 89, 116

James, W. A., 88
Jones, G. A., 67

Lambert, C. M., 55
Leff, B., 59

Mackay, D., 48
Mager, B. B., 37
McClelland, W., 35, 67, 78
McIntosh, D. M., 48
Merrill, M. A., 36, 79

Navathe, D. T., 41

Parry, J. B., 62
Pidgeon, D. A., 41
Price, E. S. J., 59

Rhodes, E. C., 29

Simon, T., 36
Slater, P., 116
Smith, I. M., 58
Sumner, W. L., 66, 67
Sutcliffe, A., 48
Sutherland, J., 22

Terman, L. M., 36, 79
Thomas, T., 66
Thomson, G., 67
Thorndike, E. L., 39

Valentine, C. U., 49
Vernon, P. E., 41, 56, 62, 66, 77

Walker, D. A., 48
Watts, A. F., 41, 48, 116
Williams, E. D., 61
Wing, A. D., 61
Winter, L., 61
Wiseman, S., 29, 30, 31, 32, 40
Woods, L. M., 61

Yates, A., 41

GENERAL INDEX

A.Q., 49
ability, academic, 57
  — arithmetical, 12
  — general, 13, 35, 56
  — practical, 57
  — special, 13, 50
adding results, 77-9
age, ability and aptitude, 7-8
age-allowances, 31, 66
allocation, 110-12, 114, 118
alternative examination, 99
anomalies, 81
aptitudes, 15-16, 103-4
arithmetic syllabus, 22
attainments, 11-12, 46, 115
attendance, 104

boys and girls compared, 24-5, 41, 43, 74-5
border-line, 49
border-zone, 82, 111

class lists, 48
coaching for intelligence tests, 39-43, 115
comparing results, 77-80
composition, 27, 33, 83
  — marking system, 28
conversion tables, 72, 73-4
correlations, 29-30, 38, 40
criterion of efficiency of selection, 116-17

Duplex tests, 115

E.Q., 30, 49
early admission, 96-8
Education Acts:
  — 1902, 2, 3
  — 1907 (McKenna), 4
  — 1944 (Butler), 4, 5, 63, 113
educational guidance, 54, 58
  — index, 49
elementary code, 3
English usage, 33
equality of opportunity, 7
essay, 27
  — topics, 32
expression in English, 27

F., 57, 58
fluidity, 93-6

g, 35, 56, 57
General Certificate of Education, 65, 107, 113, 116
general intelligence, 35, 56
general mental ability, 35, 56
girls and boys compared, 24-5, 41, 43, 74-5
grades, 44, 46, 47, 76-7
grammar, 26

Hadow report, 3, 5
health, 16, 50, 52, 104
history of child, 16, 50, 52
home, influence of, 16, 50, 52, 104, 107-8

I.Q., 30, 36, 37, 38, 44, 48-9, 75, 79-80, 83, 96
independent schools, 99
interests, 14, 15, 50, 54-5, 115
internal examinations, 34
interviews, 8, 13, 85-90
inventive responses, 27

Junior School, effect of selection on, 17, 22, 117

k, 57, 58
k:m, 56-60

leavers, early, 64
local authority, 7

m, 57, 58
marking by impression, 29
mean, 37, 72
mechanical aptitude, 57

n, 57
National Foundation for Educational Research, 41, 48, 51, 61, 116
Norwood report, 5

order of merit, 47, 49, 81

parents' wishes, 63-4
personality, 14
persistence, 14-15
practice for intelligence tests, 39-43
premature leavers, 106-9
protests, 91-2
punctuation, 26

qualifying test, 32
quota system, 46, 49-50

record cards, 15, 52, 54-5, 65, 101-5
reliability, 29, 30, 43

sample essays, 31
sampling, 26
scaled estimates, 30
scaled marks, 46
scholarships, 4
schools, central, 3
— grammar, 2, 4, 6-8, 64, 92-3, 106, 110-11, 114, 116
— intermediate, 3
— modern, 5, 6-7, 93, 110-11, 114, 117
— multilateral, 5, 6
— technical secondary, 5, 6-7, 93, 110-11
secondary code, 2, 3
secondary education for all, 4, 5
secondary education, growth of, 2
secondary education, purpose of, 118
secondary technical schools, selection for, 98-9
selective responses, 27
speed in tests, 20-4, 115
speed of marking essays, 29, 32
spelling, 26
Spens report, 5
spread of tests, 33-4, 44
standard deviation, 37, 72
standard score, 37, 38, 72, 75-6
syllabus in arithmetic, 22

teacher's estimates and assessments, 34, 46, 48, 115
technical education, selection for, 57-61, 111
temperamental qualities, 50-2, 102-3
tests, arithmetic, 18-25
— — mechanical, 19
— — problem, 22, 25-6
— attainment, 12-14, 18-34, 47
— English, 25-34
— — composition, 27-33
— — comprehension, 33
— — objective tests, 33
— general information, 55
— hurdle, 22, 24, 32
— intelligence, 8, 13-14, 35-45, 49 108
— — individual, 45, 79-80
— — non-verbal, 37, 43, 57
— — verbal, 37, 43, 57
— literary arts, 61
— Moray House—Arithmetic, 20-4
— musical ability, 61
— objective, 8, 11-12, 18, 21, 26
— performance, 58
— personality assessment, 55
— practice, 39, 41
— space, 60
— visual arts, 61
time limits, effect on test results, 21, 23
transfer, 92-6
tripartite system, 5, 6

uniqueness of the child, 10-11

V., 57
v:ed, 56-9
variety of methods, 117
vocational guidance, 54, 58, 62

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Date 15.2.66